

# PRESERVE MANAGEMENT PLAN

## **Slocum-Mostachetti Preserve**



Prepared for Oblong Land Conservancy  
by Paul Elconin

This management plan was accepted and approved by the Oblong Land Conservancy Board of Directors at a regularly scheduled meeting on \_\_\_\_\_, 2014.

\_\_\_\_\_  
Christopher Wood, Chair

\_\_\_\_\_  
Date



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## MANAGEMENT PLAN SLOCUM-MOSTACHETTI PRESERVE

### I. Preserve Vision

*The Slocum-Mostachetti Preserve ("SMP") is the premier reserve of the Oblong Land Conservancy ("OLC"). It contains varied and unique habitats which support a diverse suite of flora and fauna, some of which are rare and potentially endangered. OLC's first priorities are to maintain the property to preserve the habitats that define the unique and unusual nature of SMP--floodplain forest, red maple hardwood swamp, deep emergent marsh, upland/red cedar woodland, and open wetland –and to manage for imperiled species.*

*Oblong Land Conservancy also recognizes that SMP provides an outstanding opportunity to observe the Great Swamp, and that public use and education are critical to supporting the organization, the preserve, and OLC's mission. OLC will therefore make this special property available to the public in a carefully managed and limited manner so that ecological protection is prioritized. Public access will allow for guided education, well-planned and permitted research, limited hunting, and guided passive recreation. To engage the community, OLC will hold "Open Days," create the "Friends of Slocum-Mostachetti Preserve", and build a volunteer corps to help maintain and improve the property.*

### II. Acknowledgements

*Oblong Land Conservancy and the author of this plan would like to recognize the following for their contributions: Dr. Jim Utter (Board Chair, Friends of the Great Swamp), Billy Wallace, and Chris Mangels. In particular, OLC appreciates the data that Chris Mangels has provided.*

*Special thanks to the North American Wetlands Conservation Act Council (NAWCA), the US Fish and Wildlife Service (USFWS), and the National Fish and Wildlife Foundation (NFWF) for providing the funds to purchase the Slocum-Mostachetti Preserve, and to Dr. Utter for his role in negotiating the transaction.*





*Finally, the Oblong Land Conservancy is indebted to the Mostachetti family for their lifelong commitment to conservation and their continuing cooperation with the Oblong Land Conservancy and with Friends of the Great Swamp (FrOGS).*

### III. Background

A. The Slocum-Mostachetti Preserve is located in the Hamlet of Wingdale, Town of Dover, Dutchess County, NY (See Map 1)

*Directions: From Route 22, head west on County Route 21/Pleasant Ridge Rd. The driveway to SMP is approximately 0.8 mile west of Route 22 and 0.6 miles west of the railroad crossing. SMP shares a driveway with 3571 Pleasant Ridge Rd., and an OLC sign faces the road.*

B. Basic property details

a. Date OLC acquired property: *OLC closed on SMP on December 5, 2007*

b. Tax Parcel Numbers (Acres):

i. *SMP: 132600-7060-00-715186 (106.3 acres)*

ii. *Landfill inholding (owned by Michael Mostachetti): 132600-7060-00-683164 (10 acres)*

c. Deed Liber/Page: *22208/20*

d. Recording Number: *02200820*

C. Brief History

*Previous owner, use, management: SMP was previously owned by Leo and Helen Mostachetti. Under their ownership, the original 120+- acre property was used for hunting; many years ago, it was farmed by Mrs. Mostachetti's family, the Slocums. A portion was leased to the Town of Dover for use as a landfill (see below).*

*History of property acquisition and reasons for protecting property: The Great Swamp is a 6000+ acre wetland covering portions of the Towns of Dover and Pawling (North Flow) in Dutchess County, and Patterson and Southeast (South Flow) in Putnam County.<sup>1</sup> The Great Swamp is designated a Class I wetland by New York State Department of Environmental Conservation*

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<sup>1</sup> For more detailed information on the Great Swamp, see Siemann, Dan, 1999, "The Great Swamp: A Watershed Conservation Strategy", The Nature Conservancy, on file in the Oblong Land Conservancy offices or on the TNC website (nature.org) at <https://docs.google.com/file/d/0B68ji9C2JHh5OGJjMDBjMGUtnZe2NC00NjUwLWEzOTctYjA1NTViZjVhNmNm/edit>



*(NYSDEC) and is also known as wetland DP-22. It was designated a “Critical Environmental Area” by both the Dutchess (1991) and Putnam (1988) County legislatures and a Significant Natural Area by the Dutchess County Environmental Management Council in 1983. The Great Swamp has been a priority conservation project in the New York State Open Space Plan since 1992 and both a Priority Wetland and an “Important, Scarce, and Vulnerable” Wetland under USFWS plans and acts<sup>2</sup>.*

*In 2002, Friends of the Great Swamp (FrOGS), with a consortium of 12 Partners, secured a North American Wetlands Conservation Act (NAWCA) grant from the United States Fish and Wildlife Service (USFWS) to protect lands in the Great Swamp. Most of these grant funds were used to protect approximately 800 acres in the South Flow from 2002-2006.*

*In 2004, FrOGS received approval to apply \$142,000 of the remaining NAWCA funds to acquire this parcel in the north flow of the Great Swamp. Dr. Utter worked with the Mostachetti family and the Town of Dover to purchase SMP for \$242,000. The additional funding of \$100,000 came from a National Fish and Wildlife Foundation (NFWF) Grant to FrOGS and OLC. The acquisition costs related to the purchase were substantial and covered by a contribution of \$30,000 from FrOGS and \$10,000 from the Oblong Land Conservancy. The acquisition costs included a Phase I Environmental Site Assessment (on file in the office of the Oblong), survey, legal fees and subdivision costs.*

*Oblong acquired 106.3 acres of upland and wetland, and the Mostachetti’s retained the 10 acre landfill for which they and the Town of Dover were, and continue to be, legally responsible to maintain. Oblong retained a 4 acre conservation easement around the Mostachetti homestead, which was required to ensure protection of the adjacent wetland.*

*SMP was protected because of its outstanding habitat and wildlife attributes; it had been identified by The Nature Conservancy in 2000 as a “highest priority” parcel for protection. SMP includes forested and open wetlands of the Great Swamp, extensive frontage on the Swamp River, a central upland “marble ridge”, several State and Federally listed plant and animal species, and an existing trail system.*

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<sup>2</sup> Ibid.



- D. *Restrictions: SMP is accessed from Pleasant Ridge Road by an existing unimproved driveway. The Mostachetti family and the Town of Dover have a 25' right of way over the driveway to access the former landfill site, which is described above and owned by the Mostachettis. The access to the former landfill is described in a "Declaration of Protective Covenants and Restrictions", and an additional covenant/easement provides for the maintenance of the driveway by the Mostachettis. After completion of remediation, the former landfill shall be used exclusively for non-commercial agricultural and/or recreational uses. No structures of any kind can be built upon the 10 acre inholding during or following remediation.*

*According to the Schedule of Compliance, agreed to with NYSDEC, the Town is responsible for maintenance and monitoring of the Landfill.*

*In addition, the SMP Deed specifies that the conveyance to Oblong is to perpetually protect an important wildlife area. Therefore, as its purchase is partially funded by a USFWS grant, any disposal of the property, in whole or in part, must have the concurrence of that agency.*

- E. *History of landfill inholding: The complete record of the landfill history and closure is on file in the Oblong office. From the 1940s, the site was used as a private landfill operation. In the 1970s, the Mostachettis leased a portion of their property to the Town of Dover to be used as a landfill primarily for residential waste disposal, though small quantities of commercial waste were also deposited. The landfill was closed to the public in June 1983 and formally closed in 1997 with approval from NYSDEC and the closure meets NYSCRR Part 360 closure requirements. It is capped, there are monitoring wells and gas vents, and the Town of Dover is responsible for monitoring and maintenance. Maintenance includes mowing the +7 acre meadow atop the cap a minimum of 3 times a year.*

*The monitoring period will extend at least through the year 2025. The NYSDEC set the standards and the Town of Dover Engineer is responsible for all testing, monitoring, maintenance, and ensuring the Standards are achieved. The closed landfill must be monitored quarterly to assess erosion of the cap, particularly at sloped edges, and any such erosion must be quickly addressed.*

*An annual Summary Report must be submitted to DEC. The report shall comment on: the condition of vegetative cover, any observed leachate or erosion, vandalism, mowing schedule, baseline and quarterly routine lab reports of water tests from the 5 monitoring wells, and explosive gas monitoring.*



*Note that the landfill inholding is included in the management plan, even though it is not owned or managed by Oblong Land Conservancy. The inholding represents a unique habitat within the general boundaries of the preserve and is used by fauna which also inhabit the OLC acreage. Management activities by the Oblong Land Conservancy on the inholding will need approval by the Mostachetti's and/or NYSDEC and/or the Town of Dover, depending on whether the activities occur on the former landfill itself or off the landfill.*

- F. **Preserve Steward:** *The Preserve Steward is Constance (Stancy) DuHamel, and the Preserve Steward Volunteer is Mike Purcell. Various stewardship duties include trash pickup, installation of nest boxes, trail maintenance, awareness of rare species, and limited invasive species control. Mike Mostachetti assists with management of hunting and helping to control poaching. Neighbors help keep an eye on the property.*

*The Slocum-Mostachetti Preserve Committee includes OLC board members Sibyll Gilbert, Chris Wood, and Stancy DuHamel, and volunteer Mike Purcell. The SMP Committee will take the lead on outreach, use, and planning SMP Open Days. In addition, they will establish a group, "Friends of SMP," to encourage research, habitat management, and education. The Friends of SMP might support projects – with funding, volunteer labor, other inkind support--in which they take an interest.*

#### **IV. Current Conditions**

- A. **General area (See Maps 1: Location and 2: Aerial Photo):** *As noted above, the Slocum-Mostachetti Preserve (SMP) lies within the north flow of the Great Swamp, which is in the Housatonic River Watershed. In the area of SMP, the Great Swamp includes the Swamp River, its floodplain and adjacent low-lying areas, and the tributaries of the Swamp River. The Great Swamp wetland complex is located in the Harlem Valley, a glacially carved valley known for its calcareous soils, productive aquifers, the Great Swamp, and development pressure.*
- B. **Geology (topography, soil) (See Map 3: Soils and Topography):** *SMP topography is characterized by an upland ridge in the middle of the preserve which slopes steeply to east and gently to the west and north. A complete soil report is included as Appendix A. The upland soils are Farmington-Galway complex, a rocky well-drained calcareous limestone soil series. The wetlands and flood plains are dominated by the Carlisle muck series, while the Wayland silt loam – also poorly drained – is found in the southern portion of the preserve.*



- C. **Hydrology and Streams:** *The primary watercourse on the property is the Swamp River which begins in the Village of Pawling and flows north, eventually joining the Ten Mile River which itself is a tributary of the Housatonic River in Connecticut. The Swamp River comprises a portion of the eastern boundary and its floodplain (Map 4A: FEMA Zone A Floodplain) covers approximately 80 acres of SMP which includes most wetland areas. While there is a well-defined main channel, the Swamp River does change course and floods frequently due to the topography and beaver activity. Hydrology is characterized 1) by water quickly draining from the upland portion into the wetlands, 2) the periodic flooding of the Swamp River, and 3) the poorly drained soils retaining water for long periods. There may also be some springs on the property associated with the fen communities described below.*



#### D. Primary Community Types (See Map 4: Community Types)

##### Explanatory Note of New York Natural Heritage Program rankings:

*NY Natural Heritage ([www.nynhp.org](http://www.nynhp.org)) tracks a selected subset of New York's flora, fauna, and natural communities based on their degree of rarity or imperilment within the state. Each rare species is assigned a rank based on its rarity, population trends, and threats. Like those in all state Natural Heritage Programs, NY Natural Heritage's ranking system assesses rarity at two geographic scales: global and state. The global rank (G-rank) reflects the status of a species or community throughout its range, whereas the state rank (S-rank) indicates its status within New York. Both global and state ranks are usually based on the range of the species or community, the number of occurrences, the viability of the occurrences, and the vulnerability of the species or community around the globe or across the state. For the most part, global and state ranks follow a straightforward scale of 1 (rarest/most imperiled) to 5 (common/secure), as follows:*

- S1 - typically 5 or fewer occurrences*
- S2 - typically 6-20 occurrences*
- S3 - typically 21 - 100 occurrences*
- S4 - apparently secure in NYS*
- S5 - demonstrably secure in NYS*

*For the purposes of this management plan, ranks of S1-S3 for plants and animals are considered significant and warrant increased attention in making management recommendations and decisions. The ranked communities and species below should take precedence in management.*

*Source: Rare Animal Status List January 2013, New York Natural Heritage Program, NYSDEC, Albany, NY.*

- a. Floodplain forest: 18± acres. State Rank S2  
*This habitat is found along the Swamp River channel and its immediate floodplain in the eastern portion of SMP; the River's hydrology and flood cycles directly influence this habitat type. The dominant tree species is green ash and the soils are predominantly Carlisle muck. Beaver are present in this habitat and influence it regularly by building dams and*





*felling trees. This habitat also supports a diversity of wildlife including wood ducks and mallards, river otter, bobcat, and varied herpetofauna and herbaceous plants.*

- b. **Red maple hardwood swamp: 39± acres. State Rank S4**  
*The red maple hardwood swamp is found throughout the Great Swamp and is in the western portion of SMP; it continues west and north beyond the preserve boundaries. This is a large wetland system with poorly drained Carlise muck soils. The overstory is dominated by red maple with an understory of varied shrubs including spicebush and speckled alder. The herbaceous layer includes common plants such as jewel weed, tussock sedge, and wetland obligate ferns, as well as rare plants. The terrain is uneven with many trees on “hummocks”. A stand of dead trees running north-south just north of SMP supports an active and thriving heron rookery, with 70+ nests counted in 2013<sup>3</sup> an increase for the first time in several years.*
- c. **Deep Emergent Marsh: 6± acres. State Rank S5**  
*This is a marsh community that occurs on mineral soils or fine-grained organic soils; the substrate is flooded by waters that are not subject to violent wave action. Water depths can range from 15 cm to 2 m (6 inches to 6.6 feet); water levels may fluctuate seasonally, but the substrate is rarely dry, and there is usually standing water in the fall.<sup>4</sup> Plant cover varies depending on the location, hydrology, and adjacent habitat types. At SMP, this community is in close proximity to the floodplain forest and the main channel of the Swamp River.*
- d. **Upland/ red cedar: 30± acres. State Rank S3**  
*The upland habitat is a mix of upland red cedar at the highest elevations, regularly mowed grassland over the landfill inholding, and deciduous forest on the lower slopes. The unique red cedar habitat is characterized by calcareous dry rocky upland soils (Farmington-Galway soil series) and mature northern red cedar of varying densities. Where the cedars are the most dense, the understory is primarily limited to grasses and other herbaceous plants. In less dense stands, there are some shrubs comprised mostly of invasive species like autumn olive and multiflora rose. This*

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<sup>3</sup> Nests counted by Susan Fox Rogers and Diana Lee, by kayak, April 3, 2013.

<sup>4</sup> New York Natural Heritage Program. 2013. Online Conservation Guide for Deep Emergent Marsh. Available from: <http://www.acris.nynhp.org/guide.php?id=9913>. Accessed December 5<sup>th</sup>, 2013.



*habitat differs from the red cedar barrens at Nellie Hill primarily due to the different soil types as Nellie Hill's soils are derived from Stockbridge Marble bedrock and are sandy and gravelly, while the upland SMP soils are primarily limestone. The upland red cedar provides a distinct habitat type. If not the climax community of the uplands – the stands are almost 100% cedar with limited saplings of deciduous trees – the red cedar will likely persist for an extended period.*

- e. *Landfill meadow: The 7+- acre landfill meadow is located on the 10 acre Mostachetti-owned inholding. The landfill meadow is dominated by grasses and is mowed annually by the Town of Dover. It begins at the end of the entrance road and slopes down to the north and west. It is bordered by the red maple hardwood swamp to the north and west and upland red cedar to the east. The meadow contains numerous venting pipes for gases from the capped landfill. Management of this area is dictated by the landfill closure plan. It provides habitat for fauna which use open meadows for at least a portion of their lifecycles such as deer, carnivores, rodents, grassland birds, and insects.*
- f. *Open Wetland: This is an approximately 15 acre wetland community in the southern portion of the preserve – a portion of which is in the designated floodplain--that is characterized by dense stands of reedgrass/phragmites (seen on aerial photos), cattails, and purple loosestrife with some trees interspersed. This wetland is underlain by both the poorly drained Wayland soil series and the Carlisle muck. Mangels during his 2008 survey classified two portions of the open wetland as a "sloping fen/rich sloping fen." The rich sloping fen continues south onto adjacent property and comprises approximately 3.6 acres.*

*A fen is identified by hydrology, pH, chemistry, and characteristic plants. It generally occurs in a shallow depression composed of calcareous glacial deposits. Sloping fens are fed by small springs or groundwater seepage. Like other rich fens, their water sources have high concentrations of minerals and high pH values, generally from 6.0 to 7.8. Rich sloping fens are headwater wetlands with cold water constantly moving through them. They often have water flowing at the surface in small channels or rivulets. (From <http://www.acris.nynhp.org/guide.php?id=9928&part=3>). More study is necessary to determine the hydrology and precise boundaries of the fen area.*





- E. **Vascular Plants:** Mangels identified 476 species of vascular plants (the full list is included as Appendix B). Of these, 5 are listed by New York Natural Heritage Program as species of concern, and 3 have been listed as threatened or endangered in New York State. These three – swamp buttercup, wedge grass, and rough false/mock pennyroyal--warrant the most management attention (See Section V: Management Recommendations).

<i>Latin name</i>	<b>Common Name</b>	<b>Habitat</b>	<b>NYNHP Rank</b>
<i>Carex bushii</i>	Bush's sedge	Upland open areas	S3
<i>Trichostema brachiatum</i>	False pennyroyal	Upland open areas	S3
<i>Ranunculus hispidus</i> var. <i>nitidus</i>	Swamp buttercup	Red maple hardwood swamp	S1 (endangered in New York)
<i>Sphenopholis obtusata</i>	Wedge grass	Open wetland	S1 (endangered in New York)
<i>Hedeoma hispida</i>	Rough false or mock pennyroyal	Upland open areas	S2S3 (threatened in New York)

- F. **Fauna:** Numerous fauna have been identified at SMP, and the complete list is included as Appendices C and D. Discussion and recommendations will focus on herpetofauna, mammals, and birds. (See Section V Management Recommendations)

- a. **Herpetofauna:** A total of 3 species of turtle have been observed at Slocum-Mostachetti by various individuals over several years including Musnick, Gilbert, and Mangels. One, the spotted turtle, which has been well documented by Musnick and other volunteers, is classified by NYSDEC as a species of "special concern" and management actions should focus on documenting and managing this population.

*It should be noted that the Great Swamp harbors 2 species of conservation concern--bog turtle and wood turtle, ranked S2 and Watch-list respectively-- though they have not been observed at SMP. In 2013, Dr. Utter (personal communication) reported that the fen wetland is not*



*exceptional habitat for bog turtles as the perennial seeps are relatively small and many plant species typical of fens have not been observed at SMP. In addition, SMP may not be ideal habitat for box turtles as the upland section is essentially an “island”: the SMP upland is cut off from other upland areas by both the surrounding wetlands and Route 21.*

- b. Mammals: *Mammals that can strongly influence SMP and/or are of management concern include beaver, white-tailed deer, and potentially New England Cottontail; Indiana bat is also noted.*

*Beaver can have a profound effect on the preserve by felling trees and altering the hydrology of the Swamp River; however, their presence is generally welcome and controlling the population is not recommended.*

*The number of white-tailed deer using the preserve is not known. The annual hunting take is very low, and more study is needed to determine if the deer population is high and/or adversely affecting the habitat of the preserve.*

*New England cottontail, a species of “special concern” and a candidate for listing as a Federal endangered species, may be present at SMP. There is suitable habitat – dense shrubs and field edges – and large numbers of cottontail have been observed. The New England cottontail’s imperiled status is due mostly to habitat loss and displacement by the Eastern cottontail, which it closely resembles. Eastern cottontail is not originally native east of the Hudson River, but following introduction for game purposes has become well established regionally. Distinguishing between the eastern and New England cottontails in the field is virtually impossible; genetic analysis of fecal pellets or study of skull characteristics is usually required. Confirmed populations occur in northern Dutchess County, and the Dutchess-Columbia county area is currently the species’ state stronghold. Dr. Utter collected fecal pellets during the winter of 2012-2013, but as of the date of this report they have not been analyzed by the New York State Department of Environmental Conservation.*

*Similar to the New England cottontail, the Indiana bat may be a denizen or user of the preserve. Per Mangels, “The Indiana bat, which is currently listed as a Federal ‘endangered Species’...was recently identified at a sampling site along the Swamp River within the former State Hospital*



*facility (roughly 0.5 mile to the immediate south)... Its preference for riparian areas for both summer foraging habitat and location for maternity roosts means that its use of the Swamp River corridor within SMP is highly possible, if not probable.... identification of this species requires expertise and special survey technique (mist netting)" .... It is recommended that OLC conduct a survey for the Indiana Bat to attempt to conclusively determine this bat's presence or absence at SMP.*

- c. Birds: *Over 90 species of birds have been observed by several individuals over the years at SMP (see Appendix D). A number of these species are listed by NYSDEC as "Species of Greatest Conservation Need" and are on the "Audubon Watch List", while one--the Kentucky warbler--is state-listed by NYNHP. Another species of management interest is the American woodcock, whose numbers are declining and SMP provides good habitat for these interesting birds. While the sheer number of species observed is important and a testament to the richness of SMP, it has not been determined which species are breeding at the preserve and therefore warranting more consideration as targets for specific management activities. It is recommended that Oblong Land Conservancy conduct multi-year breeding bird surveys by a qualified ornithologist to determine breeding populations and highest priority targets for management.*

G. Butterflies: *SMP is rich in butterfly species due to the varied habitats and presence of native herbaceous plants including bluestem grasses. Wallace has observed 50 species (Appendix E). Of these, three are state-listed by New York Natural Heritage Program, but not globally listed and not endangered or threatened in New York State (See Section V Management Recommendations)*

<i>Latin name</i>	<b>Common Name</b>	<b>Habitat (host plant)</b>	<b>NYNHP Rank</b>
<i>Atrytonopsis hianna</i>	Dusted Skipper	Open Fields (bluestem grasses)	S2S3
<i>Euphyes dion</i>	Dion skipper	Numerous different habitats (sedges)	S3
<i>Poanes viator</i> var. <i>zizaniae</i>	Broad-winged skipper	Open Fields/Open Wetlands (Common reed/ <i>Phragmites</i> )	S3



- H. Primary invasive species of concern and control methods: *Mangels identified numerous invasive plant species at SMP (see complete list in Appendix F). Of these, it is recommended to initially target and actively control a few to maximize the benefits of limited resources. These target species are: autumn olive and oriental bittersweet. Autumn olive is a quickly spreading woody shrub which, as individual plants grow and mature, displaces most other vegetation. Individual shrubs are found throughout the upland and seasonally wet areas, and some stands are quite dense. Oriental bittersweet is a twining woody vine which, when dense, can choke and kill mature trees. Its berries are enjoyed by birds, which contributes to the spread of this troublesome species.*

*One invasive which has not been observed at the Preserve is black swallow wort (*Cynanchum nigrum*). Surveys for this plant should be conducted annually and all plants located with GPS and dug out immediately. Black swallow-wort, native to Europe, is a perennial, herbaceous vine in the milkweed family. It has recently become a widespread invasive nuisance plant with no known natural controls and resulting serious impacts to native flora and fauna. The plant is noxious and toxic and can form extensive patches that crowd out native vegetation.*

- I. Existing improvements (See Map 5: Existing Improvements and Points of Interest and Map 5A: Macadam Parking/Storage Area) *SMP has a network of trails, the entrance road, the macadam parking/storage area, the landfill with gas vents, and three locked groundwater monitoring wells. The entrance road is gated and locked.*

- J. Historic resources if applicable: *None of note.*

- K. Current uses:

- a. *Members of the Ralph T Waterman Bird Club conduct Fall & Spring Migratory Bird Counts*
- b. *Oblong Land Conservancy runs approximately 6 public events at the preserve annually. These are guided events and draw from 10-30 people.*
- c. *Mike Mostachetti and two invited guests hunt deer and turkey, but the annual take is low.*



- d. *Members of the Mostachetti family store equipment and non-hazardous materials on a small portion of their property inholding. Stored materials include firewood, equipment, and building materials.*

L. Problems/concerns/risks/liabilities (encroachments, trespass, poaching, access points, etc.):

- a. *Illegal hunting of waterfowl is a prime concern. It is suspected that poachers enter SMP from the east by crossing the railroad tracks. The Great Swamp is a haven for breeding and migratory birds and Oblong Land Conservancy is keen to keep SMP a safe area for all birds. Waterfowl poaching is unacceptable and OLC has a zero-tolerance approach to this illegal practice; however, it is difficult to catch poachers "in the act". Target shooting has also been reported at the preserve by a neighbor.*
- b. *OLC is against trapping on the preserve and has a zero-tolerance approach to this activity, though as above it is difficult to catch offending parties.*
- c. *ATVs access the property – tracks are observed traversing the landfill meadow. OLC will not tolerate such use and will report trespassers observed on the property.*
- d. *The spread and influence of the specific invasive species listed above is a major concern at the preserve.*
- e. *Unmanaged public use is a concern as even well-intentioned visitors can disrupt sensitive plants and wildlife. Accordingly, public access to SMP will be by prior arrangement or guided only, and OLC will develop and install signage at the gate explaining this policy.*

M. Current management activities:

- a. *The grass field of the former landfill is mowed by the Town of Dover under the management regime specified by NYSDEC as part of the landfill closure.*
- b. *The paths are mowed by a local contractor – Pete Muroski of Native Landscapes. Muroski mows in the late fall, but is available to mow more*



*frequently as needed. However, mowing is timed to avoid the turtle nesting season.*

- c. *Mike Mostachetti and a few friends hunt the property for deer and wild turkey. Recent takes of deer and turkey have been from 0 to only a few animals of each. Mostachetti also works to limit poaching of waterfowl by unauthorized hunters who trespass onto the preserve from the east.*
- d. *In collaboration with OLC, the Dover Conservation Advisory Commission (CAC) installed wood duck boxes at SMP.*
- e. *SMP preserve stewards and volunteers conduct limited routine maintenance such as clearing downed limbs and trees from the trails and access road.*

#### N. Connections

- a. *Adjacent properties (Heron rookery). SMP is not connected to other currently protected lands. Immediately north of SMP is an active great blue heron rookery with over 70 nests. East of SMP are the railroad tracks; south and southeast are small privately owned parcels.*

*The 4 acres owned by the Mostachettis are protected by a conservation easement granted to OLC concurrently with OLC's acquisition of the Preserve.*

- b. *Other nearby and comparable or similar preserves: Nearby preserves include the Nellie Hill and Roger Perry Preserves which are similar to SMP in ecology, geology, and soils. Nellie Hill, owned and managed by The Nature Conservancy, is approximately 7 miles north. Nellie Hill includes "calcareous cliffs with pocket grasslands, oak woodland and a previously grazed, sloping meadow. There are at least five springs and two ponds on the property. The preserve includes an exemplary occurrence of the rare red cedar rocky summit community, limestone woodlands, and at least ten state and globally rare plants."<sup>5</sup> Roger Perry Preserve, also owned and managed by The Nature Conservancy, is approximately 7.5 miles north and near Nellie Hill. Roger Perry includes a "series of low, narrow limestone ridges that parallel each other. The ridges eroded over*

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<sup>5</sup> <http://nynjctbotany.org/lgtofc/nellie.html>



*time leaving an area of white sand. On the ridges are red cedar woodlands. The lowlands consist of globally rare, rich sloping fens (where ground water level is exposed) with some unusual and rare animals. The locale is a statewide ecologically significant area. The New York State Natural Heritage Program and The Nature Conservancy ranks Dover Sand Hills as a B3 area (an area of high biodiversity).”<sup>6</sup>*

**V. Management Recommendations (See Map 6: Tax Parcels and Map 7: Selected Proposed Improvements)**

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<sup>6</sup> <http://nynjctbotany.org/lgtofc/perry.html>





## **VI. Attachments**

Map 1: Locator

Map 2: Aerial Photo

Map 3: Soils and Topography

Map 4: Community Types

Map 4A: FEMA Zone A Floodplain

Map 5: Existing Improvements and Points of Interest

Map 5A: Macadam Parking/Storage Area

Map 6: Tax Parcels

Map 7: Selected Proposed Improvements

Survey

Appendices:

Appendix A: NRCS Soil Report

Appendix B: Vascular Plants

Appendix C: Fauna (excluding birds)

Appendix D: Avifauna

Appendix E: Butterflies

Appendix F: Invasive Plants

Paul Elconin Resume and Bio



**MANAGEMENT PLAN RECOMMENDATIONS  
SLOCUM-MOSTACHETTI PRESERVE**

RECOMMENDATIONS	OBJECTIVES	RESPONSIBILITY	TIMING	ESTIMATED COSTS	MANAGEMENT ACTIONS
<b><u>Administrative Recommendations</u></b>					
Quarterly reports to Board	Inform board of activities on and plans for preserve	Preserve Steward	Ongoing	0	
Log volunteer hours	Record keeping; support for grants and organization; PR	Preserve Steward	Ongoing	0	
Review management plan yearly and update progress	Keep plan current and adjust recommendations to reflect progress, changes in capacity, and new issues	OLC SMP committee and "Friends of SMP"	Annually	0	Appointment 1 board or committee member to coordinate regular updates
Fundraise for SMP management	Raise funds for preserve; track in separate account; determine policy for how money is spent and who within OLC has authority to spend	OLC Board	2014-ongoing	Funds for letters, events, etc.	Produce full color fundraising brochure to summarize management plan and goals for funders; prepare talking points for board members
<b><u>Management Recommendations</u></b>					
Clean up trash and junk outside of DeVersia leasehold area	Clean up preserve	Volunteers	2014	\$200+- (dump fees)	Remove trash/debris as appropriate; consider whether removal will create too much disturbance
Clean and "neaten" leasehold area	Main entrance beautification	OLC/lessor	2014	Attys fees?	Can OLC find an alternate site off SMP and move the items there?
Stake boundaries of landfill parcel and leasehold area	Delineate bounds of leasehold	Surveyor	2014	Solicit bid (approx \$1000)	Need surveys showing all areas.

**MANAGEMENT PLAN RECOMMENDATIONS**  
**SLOCUM-MOSTACHETTI PRESERVE**

RECOMMENDATIONS	OBJECTIVES	RESPONSIBILITY	TIMING	ESTIMATED COSTS	MANAGEMENT ACTIONS
"Daisy chain" locks on gate	Better control access as combination lock not effective--too many people know combination; ensure emergency services have access	OLC	ASAP	\$50+-	Key locks-Mostachetti; lessor; OLC; Fire Dept?; 1 combo lock for those with permission (ie Waterman Bird Club; OLC Board, etc.)
Install Kiosk	Communicate rules, maps, OLC and SMP info, SMP "vision"; credit funders, volunteers, etc.	Consultant designs panels; volunteers build	2014 or 2015	\$5000+-	Solicit bids from designers; plan for fall 2014 unveiling.
Maintain and update kiosk information regularly	Safety notices (icy conditions, trail closures); visitor log; events; seasonal information; information on how to report issues or wildlife sightings;	OLC, volunteers	Quarterly	Nominal	
Formally define parking area	Plan parking to minimize impacts; id locations of rare plants	OLC	2014	Nominal	Consider a landscape architect to "design" plan for entrance area (parking, macadam area, picnic table location, etc).
Develop and post guided access policy	Make clear to public reasons for limiting public access	OLC	2014	Nominal (signage)	
Hunting--implement plan for hunting by permission	Primarily engender good will as annual take is +-0 for deer and turkey; 2nd objective is "control" deer population	OLC and Mike Mostachetti and 2 others	2014	Nominal	Review insurance liabilities; add'l insurance needed? Signage is needed at entrance gate; develop hunter waiver and permission
Work with adjacent land owners on protection and coordinated management	Seek to protect adjacent lands and coordinate management as appropriate	OLC, landowners	Long-term	Depends on conservation tool	Continued outreach to neighbors

**MANAGEMENT PLAN RECOMMENDATIONS  
SLOCUM-MOSTACHETTI PRESERVE**

RECOMMENDATIONS	OBJECTIVES	RESPONSIBILITY	TIMING	ESTIMATED COSTS	MANAGEMENT ACTIONS
Recruit preserve "watch dog" to keep eye on property	Neighbor who can lock the gate, call police, report problems "immediately"	Local person/ neighbor	ASAP	0	Educate person about appropriate conduct and how to address issues like illegal trespass, dumping, etc.
Post all boundaries; consider fencing portions	Ensure all boundaries are marked; refer to hunting memo and DEC posting rules for sign language. Include OLC contact info	Surveyor and/or OLC (volunteers)	ASAP	Solicit bid from surveyor and from fence company	
<b><u>Visitor Use/Volunteer Recommendations</u></b>					
Recruit and train volunteers	Create pool of committed and reliable volunteers; nurture and reward	OLC	Ongoing	\$500+/-/yr for food, awards, etc.	Screen volunteers for skills, interests, availability, resources. Develop database and schedule
	Have special group of volunteers as "Friends of SMP" as way to reward, nurture and help guide preserve and feed into OLC Brd; appt 1 OLC Brd or advisor to lead	OLC, preserve steward, volunteers	Ongoing	\$500+/-/yr for food, awards, etc.	Work with Friends group to prioritize mngt tasks and fundraising
Plan, map, and maintain trail system	Close short segment to the northernmost monitoring well	Volunteers	2014	Nominal	
	Consider creating loop around north end of upland	Volunteers	Ongoing as resources allow	\$600+- for preserve trail map	Walk and flag and GPS; investigate area for sensitive species and drainage issues; creating trail will require chain saw work
	Consider creating trail north of open wetland	Volunteers	Ongoing as resources allow	Nominal	Walk and flag and GPS; investigate area for sensitive species and drainage issues;

**MANAGEMENT PLAN RECOMMENDATIONS**  
**SLOCUM-MOSTACHETTI PRESERVE**

RECOMMENDATIONS	OBJECTIVES	RESPONSIBILITY	TIMING	ESTIMATED COSTS	MANAGEMENT ACTIONS
	Have pool of volunteers who will walk and maintain trails regularly and after storm events to ensure that preserve is safe and accessible	Volunteers	Ongoing	0	Develop a list of volunteers qualified to operate chainsaws; develop and have volunteers sign waivers
Clean up some existing open areas of preserve; expand others (Total: 2-3)	Make these areas more suitable as gathering areas for programming;	Volunteers	Ongoing	\$0	Any species of concern in these areas? Clear brush, invasives, and consider spreading mulch to create a more attractive area
	Install benches in some of the open areas; install picnic table near parking area	Donors	Ongoing	\$1000-4000	Research bench designs, materials, prices. Make from cedar harvested on SMP?
Construct additional bird blind on edge of open wetland (See Map 7 for potential locations)	Enable public to birdwatch in unobtrusive manner; locate at southern end of property with clear view to wetland	OLC, contractors, volunteers	2015	Fund with grants and volunteer labor	Permitting by DEC (and Town); cost; design; materials; location
Continue and expand regular public programming (First Saturdays, etc.)	Education, outreach, volunteer recruitment	OLC	Ongoing	Nominal	
Art and Nature program	Education, outreach, volunteer recruitment	OLC, artist-in-residence	Ongoing	0	
Work with local emergency services to develop emergency response plan	Have plan in place in case of emergency so that local rescue personnel understand sensitive ecology and there is a plan for emergency vehicle/ATV access along trails and to remote areas	OLC, preserve steward, emergency services	2014	Nominal. Some minimal funds to host meetings with EMS personnel	

**MANAGEMENT PLAN RECOMMENDATIONS  
SLOCUM-MOSTACHETTI PRESERVE**

RECOMMENDATIONS	OBJECTIVES	RESPONSIBILITY	TIMING	ESTIMATED COSTS	MANAGEMENT ACTIONS
<u>Habitat/Research Recommendations</u>					
Conduct breeding bird survey	Establish longitudinal data to determine breeders for management.	Consultant (year 1); consultant/volunteers (years 2-3)	2014-2016	\$1200/yr for 3 years=\$3600	
	Develop list of primary breeding bird management targets (Kentucky warbler? Woodcock? Wood duck? Prairie warbler? Black duck?) and develop mgnt recs for targets	OLC	2015-16	\$1000+- for plan	
Develop management recommendations for listed butterfly species	Create and implement recommendations for the 3 State listed butterflies	Consultant	2014	\$1000+- for plan	Redo butterfly surveys to solicit current data; create species specific plans regarding host plants, mating season, etc.
Establish annual butterfly tracking	Create longitudinal data sets to track common butterflies and changes in populations over time	Volunteers	2014-ongoing	Nominal	Choose species; study protocol from UC Davis study; consultant needed to establish protocol and methodology
Conduct deer survey	Determine deer density and impacts--how are they affecting the preserve? Develop management and hunting recommendations based on results of survey	Consultant	2014-2015	Solicit bids	Implement sampling protocol used by NYSDEC
Conduct Indiana bat survey	Determine if Indiana bats are using preserve	Consultant: bat biologist	2015	Solicit bids	

**MANAGEMENT PLAN RECOMMENDATIONS**  
**SLOCUM-MOSTACHETTI PRESERVE**

RECOMMENDATIONS	OBJECTIVES	RESPONSIBILITY	TIMING	ESTIMATED COSTS	MANAGEMENT ACTIONS
Invasive species management: autumn olive and honey suckle	Contain and reduce spread by cutting and spraying "lone" individuals or small clusters. Start along trails and also move from south to north (infestation is not as bad south of macadam	Volunteers	2014-ongoing	Nominal; Train volunteers per NYNJTC protocol	Cut trunks +/-6" from ground and spray stumps immediately with 50:50 herbicide/water mix to kill stumps and prevent resprouting.
Invasive species management: bittersweet	Cut and spray if affecting trees	Volunteers	Ongoing	Nominal; Train volunteers per NYNJTC protocol	Solicit vine cutting protocol
Invasive species management: black swallow wort	Conduct annual surveys to detect early infestations; dig out all observed plants	Train volunteers to identify	Annually	Nominal; Train volunteers per NYNJTC protocol	Survey to determine locations
Work with NYSDEC to determine optimum mowing schedule to avoid nesting grassland birds.	Time mowing to take nesting birds into consideration.	OLC, Town, and DEC	2015 and ongoing	\$0-1000/yr (depending on who, when, rate)	Start dialogue with Town of Dover and NYSDEC on management practices concerning the field atop the landfill cap.
	Can the landfill be grazed? Can hay be taken? Can the grass mix be changed to different species mix? Can grass be converted to a shrub habitat?				
Keep "butterfly meadow" open by cutting trees and shrubs	Maintain the open area. Potentially expand; rope off to keep out public	Volunteers	Immediate! Olive and rose are colonizing	\$0	Remove invasive trees and shrubs; erect split rail fence to keep public out of meadow and install explanatory signage

**MANAGEMENT PLAN RECOMMENDATIONS  
SLOCUM-MOSTACHETTI PRESERVE**

RECOMMENDATIONS	OBJECTIVES	RESPONSIBILITY	TIMING	ESTIMATED COSTS	MANAGEMENT ACTIONS
Conduct thorough and rigorous turtle survey for spotted turtles and develop management recommendations for this species.	Spotted turtles are a species of special concern in NY.	Consultants	2014	Solicit bids from consultants and Hudsonia	
Create turtle nest protection program	Protect turtle nests along trails from nest predation (raccoons, etc. digging up nests) with wire cages or other means	Mike Musnick coordinates with volunteers	2014-ongoing	\$400? For materials	Research where turtles nest; train volunteers to id nests; research different types of protection and efficacy.
		Work with Metro North, Mike Musnick, and FROGS to build turtle ramps on tracks	2014		
Identify areas with rare plants and rope off upland areas with explanatory signage	Locate and protect populations of rare plants; track changes in populations over time	OLC; consultant	Annually	Approx \$750/yr	Consultant locates and maps annually. Rope off areas annually with explanatory signage
	Prepare and implement conservation and management recommendations for rough false/mock penny royal, swamp buttercup, and wedge grass	Chris Mangels; OLC	2014	Approx \$1000 for Mangels time	Mangels develops recommendations

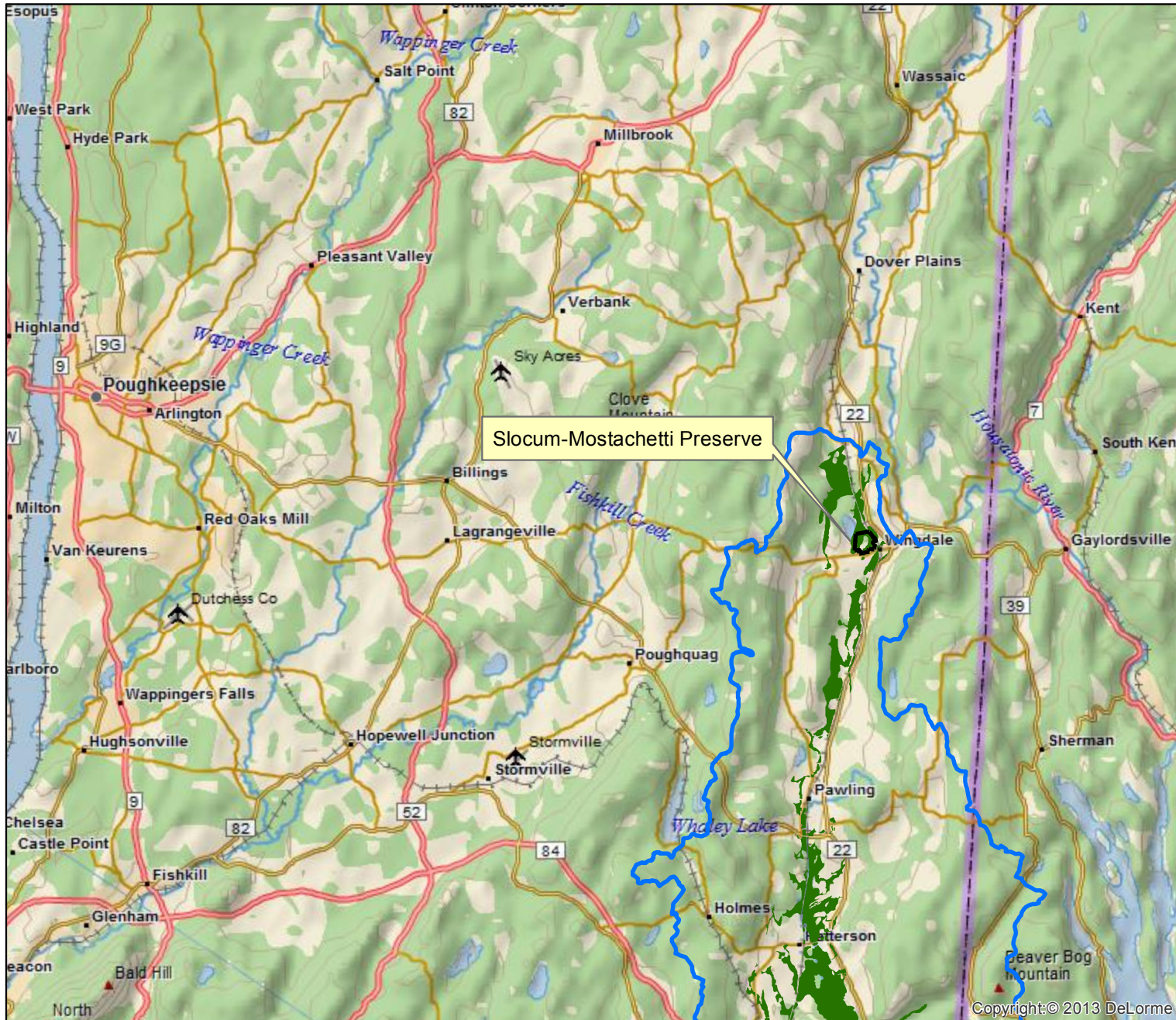
**MANAGEMENT PLAN RECOMMENDATIONS  
SLOCUM-MOSTACHETTI PRESERVE**

RECOMMENDATIONS	OBJECTIVES	RESPONSIBILITY	TIMING	ESTIMATED COSTS	MANAGEMENT ACTIONS
Study fen areas	Identify extent, hydrology, soil/water chemistry, and plants	Consultant	2015	Seek bids from consultants, Hudsonia, and/or college/master's students	
Make SMP available for well-planned and reviewed ecological research projects	Enhance knowledge of SMP and contribute to scientific knowledge of the local area and its regional significance	SMP committee of OLC Board vets proposals by academics, agencies, NGOs	2015 and ongoing	Nominal	OLC needs to develop review criteria, priority projects, and template for a research "contract".



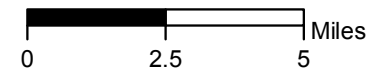
# Slocum-Mostachetti Preserve Management Plan

## Map 1: Location



### Legend

- SMP Boundary
- Great Swamp
- Great Swamp Watershed



Map Date: April 1, 2014

Data Sources:  
Great Swamp layer source unknown.  
Great Swamp Watershed courtesy The Nature Conservancy. SMP boundary adapted from survey data courtesy of the Chazen Companies and is approximate. Basemaps from ESRI.

Map is for documentation purposes only and was not prepared or certified by a licensed land surveyor.

Maps prepared by Paul Elconin

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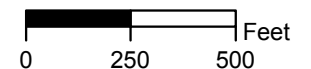
# Slocum-Mostachetti Preserve Management Plan

## Map 2: Aerial Photo



### Legend

- ..... Access road
- SMP Boundary
-  Lands retained by Mostachettis
-  Mostachetti Easement
-  Great Swamp DP-22



Map Date: February 1, 2013

Data Sources:  
Topography from NYS GIS Clearinghouse. SMP boundary adapted from survey data courtesy of the Chazen Companies and is approximate. Basemaps from ESRI. Great Swamp layer source unknown.

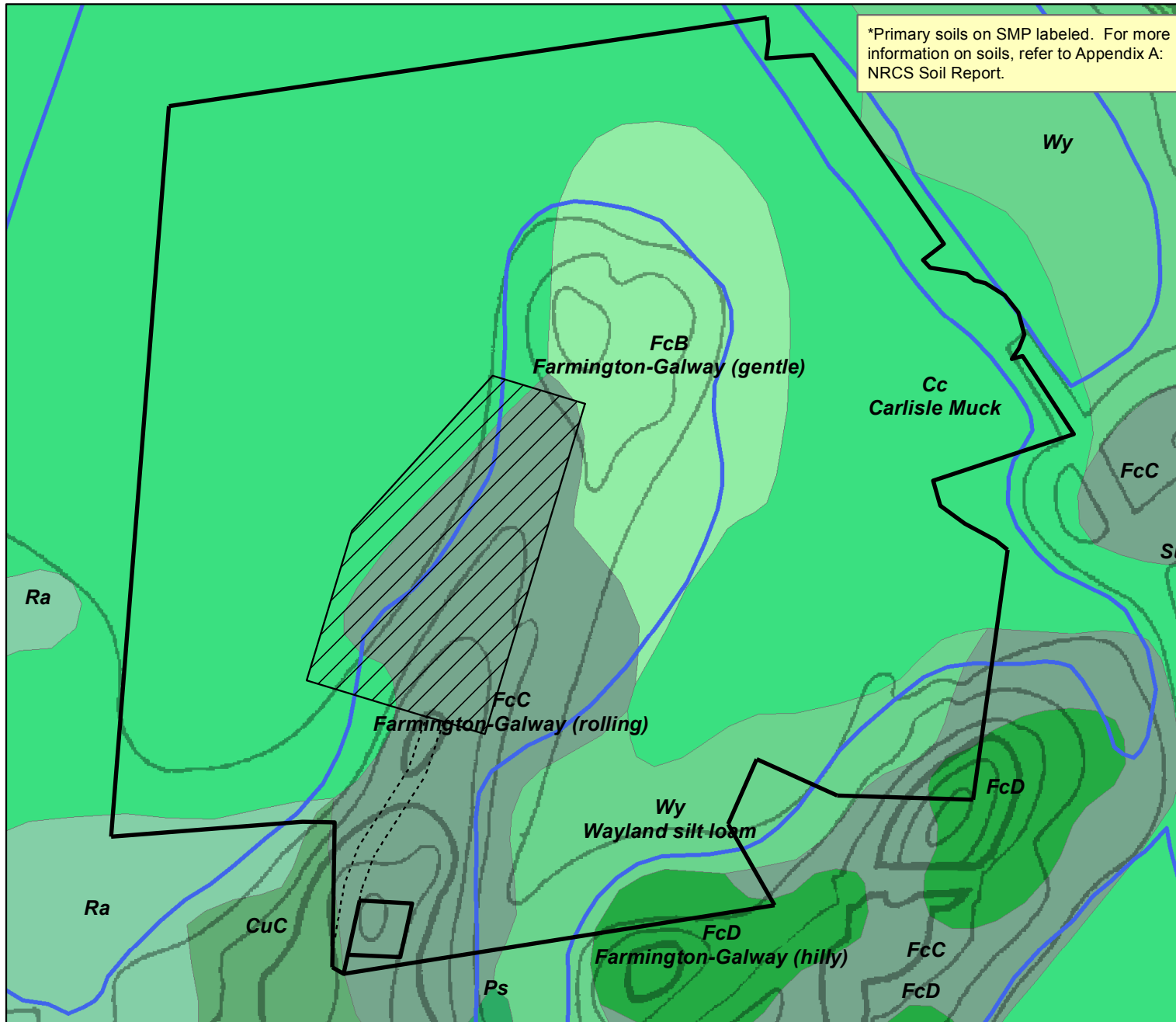
GPS Points recorded with Motion X for Iphone and/or Trimble GeoXT: locations approximate and not verified by survey. Map is for documentation purposes only and was not prepared or certified by a licensed land surveyor.

Map prepared by Paul Elconin

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

# Slocum-Mostachetti Preserve Management Plan

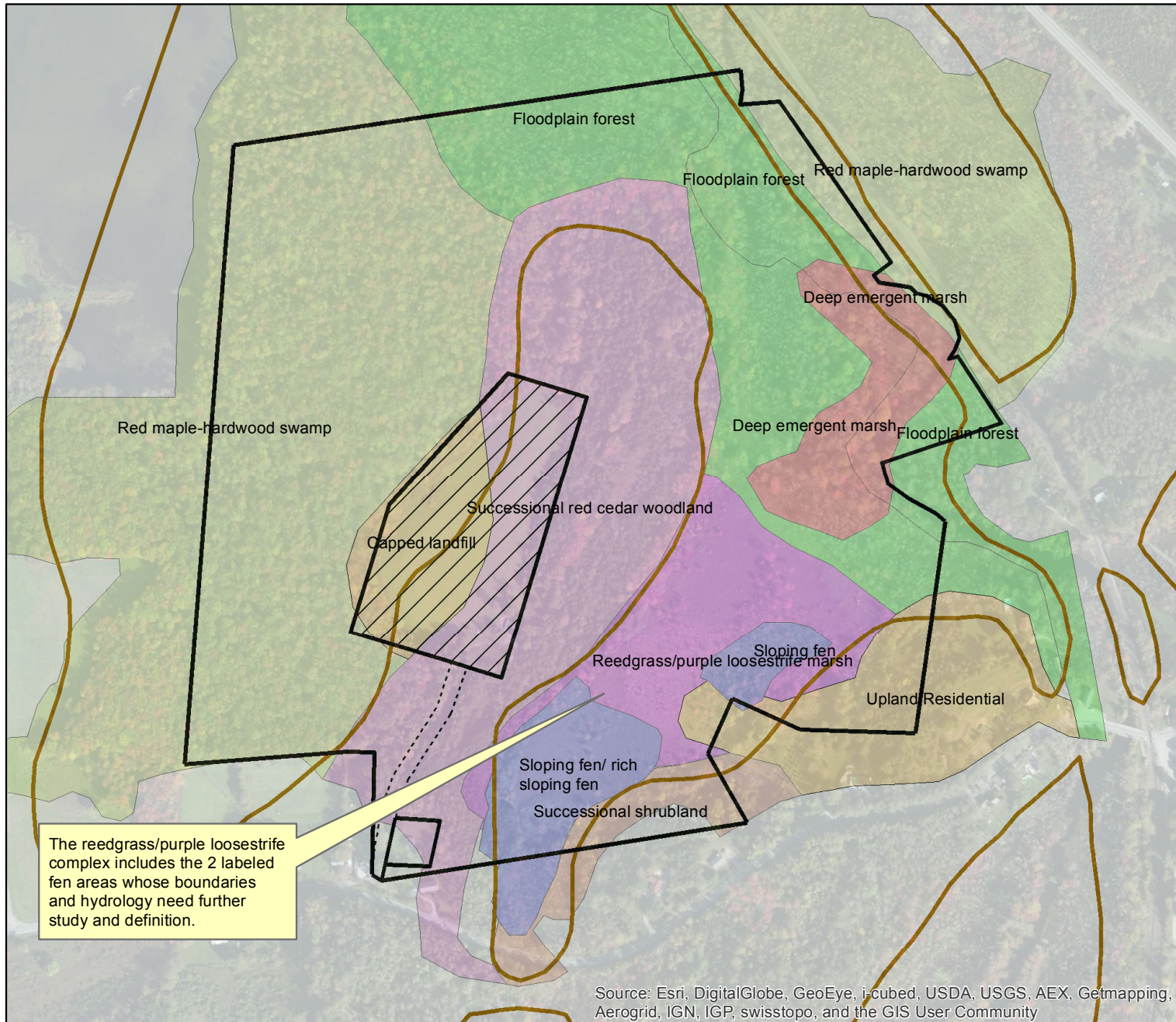
## Map 3: Soils\* and Topography





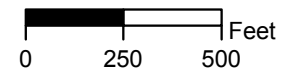
# Slocum-Mostachetti Preserve Management Plan

## Map 4: Community Types



**Legend**

- Access road
- Lands retained by Mostachettis
- SMP Boundary
- Great Swamp Bndry



Map Date: February 1, 2013

Data Sources:  
SMP Community types courtesy of Christopher Mangels. SMP boundary adapted from survey data courtesy of the Chazen Companies and is approximate. Basemaps from ESRI. Great Swamp layer source unknown.

Map is for documentation purposes only and was not prepared or certified by a licensed land surveyor.

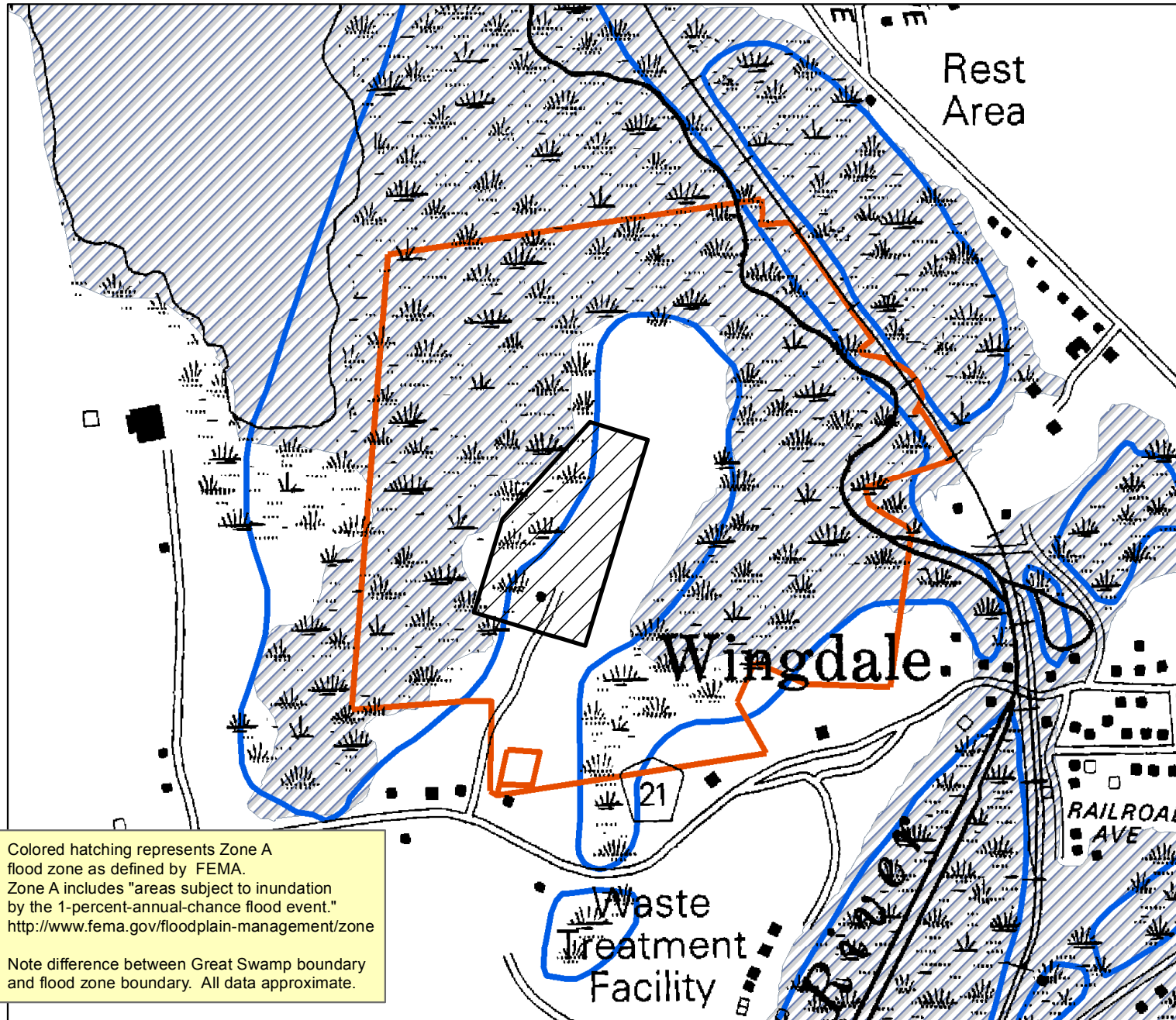
Map prepared by Paul Elconin

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



# Slocum-Mostachetti Preserve Management Plan

## Map 4A: FEMA Zone A Floodplain



### Legend

- Lands retained by Mostachettis
- SMP Boundary
- Great Swamp Bndry



0 500 1,000 Feet

Map Date: March 31, 2014

Colored hatching represents Zone A flood zone as defined by FEMA. Zone A includes "areas subject to inundation by the 1-percent-annual-chance flood event." <http://www.fema.gov/floodplain-management/zone>

Note difference between Great Swamp boundary and flood zone boundary. All data approximate.

Data Sources:  
SMP boundary adapted from survey data courtesy of the Chazen Companies and is approximate.  
Basemaps from ESRI. Great Swamp layer source unknown.

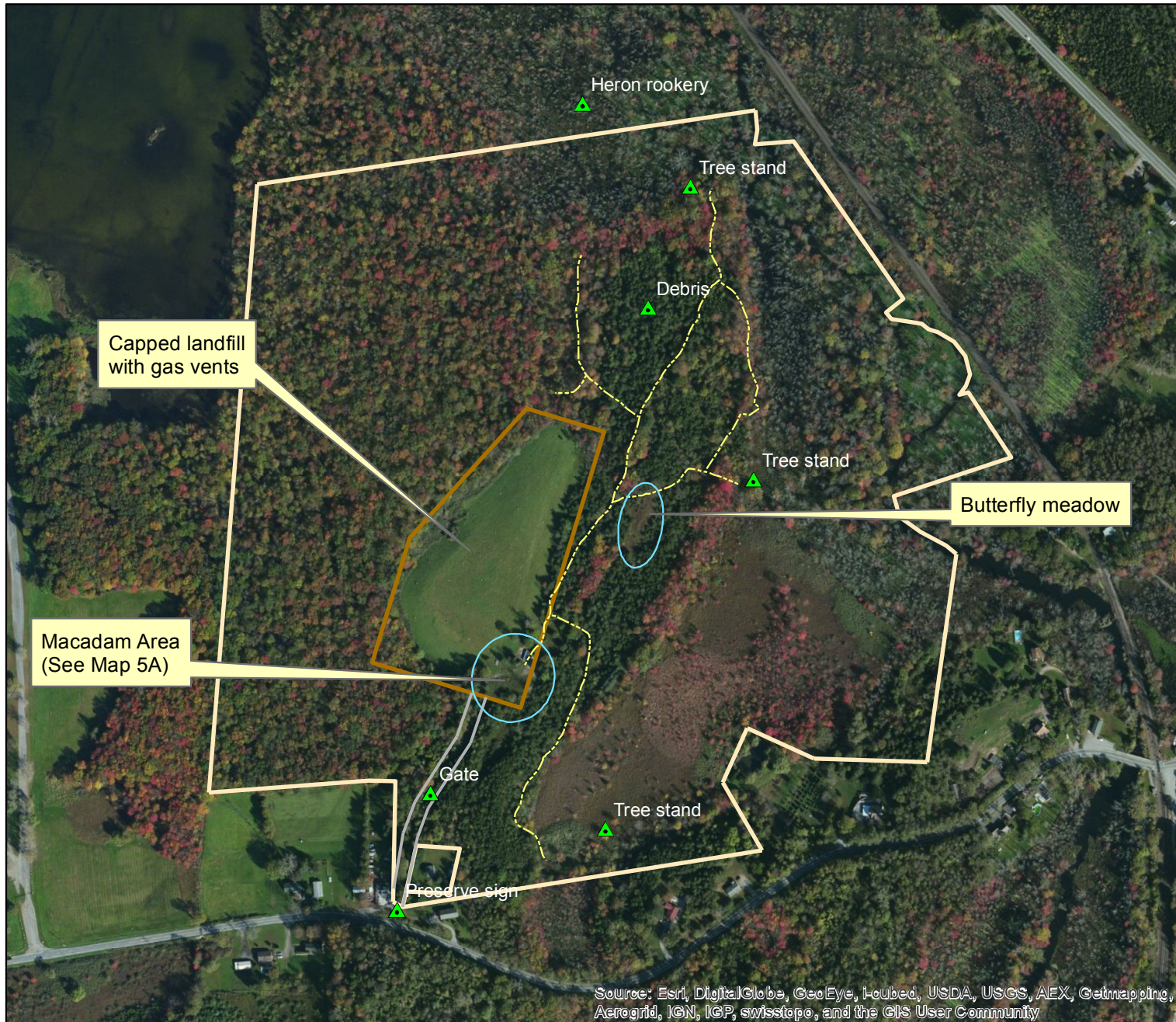
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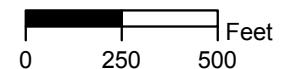
# Slocum-Mostachetti Preserve Management Plan

## Map 5: Existing Improvements and Points of Interest



### Legend

- GPS Points
- Open Trails
- Access road
- Lands retained by Mostachettis
- SMP Boundary



Map Date: February 18, 2013

Data Sources:  
GPS Points recorded with Trimble GeoXT and/or Motion X for Iphone and not verified by survey. SMP boundary adapted from survey data courtesy of the Chazen Companies and is approximate. Basemaps from ESRI. Other data courtesy of Mangels.

Map is for documentation purposes only and was not prepared or certified by a licensed land surveyor.

Map prepared by Paul Elconin

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



# Slocum-Mostachetti Preserve Management Plan

## Map 5A: Macadam Parking/Storage Area



### Legend

- Trails
- Access road
- Lands retained by Mostachettis



0 25 50 Feet

Map Date: February 1, 2013

Data Sources:  
GPS Points recorded with Trimble GeoXT and/or Motion X for Iphone and not verified by survey. SMP boundary adapted from survey data courtesy of the Chazen Companies and is approximate. Basemaps from ESRI. Other data courtesy of Mangels.

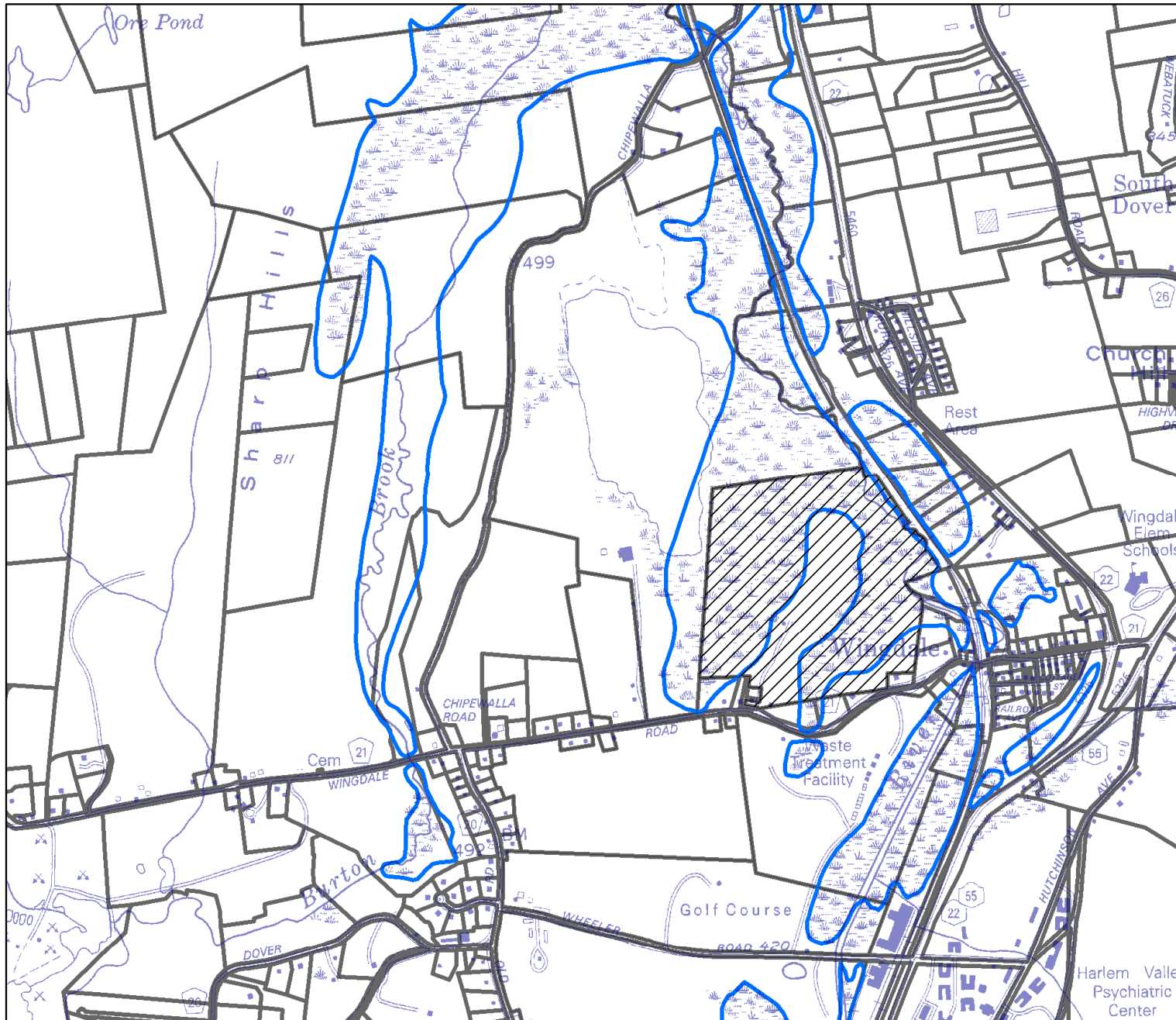
Map is for documentation purposes only and was not prepared or certified by a licensed land surveyor.

Map prepared by Paul Elconin




Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

# Slocum-Mostachetti Preserve Management Plan

## Map 6: Tax Parcels



### Legend

-  SMP
-  Great Swamp Bndry
-  Tax Parcels



0 1,000 2,000 Feet

Map Date: February 1, 2013

Data Sources:  
SMP Community types courtesy of Christopher Mangels. SMP boundary adapted from survey data courtesy of the Chazen Companies and is approximate. Basemaps from ESRI. Great Swamp layer source unknown.

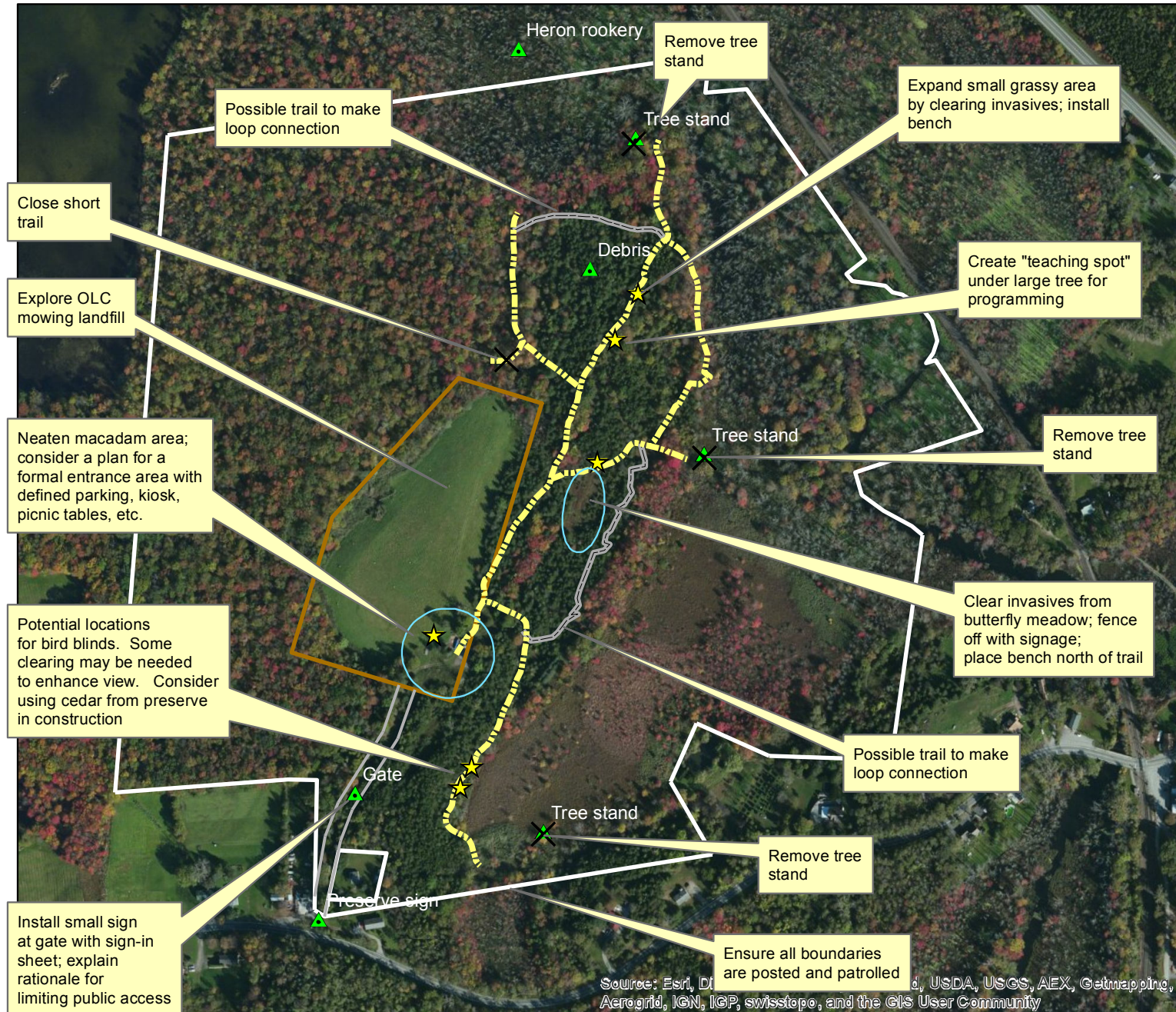
Map is for documentation purposes only and was not prepared or certified by a licensed land surveyor.

Map prepared by Paul Elconin



# Slocum-Mostachetti Preserve Management Plan

## Map 7: Selected Proposed Improvements\*



\*Refer to Management Plan for complete list of recommendations and proposed improvements.

# Survey









Appendix A:

NRCS Soil Report





United States  
Department of  
Agriculture



NRCS

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for **Dutchess County, New York**

**Slocum-Mostachetti Preserve**



April 5, 2013

# Preface

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Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://soils.usda.gov/sqi/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<http://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://soils.usda.gov/contact/state\\_offices/](http://soils.usda.gov/contact/state_offices/)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the official soil survey information.

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# How Soil Surveys Are Made

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Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

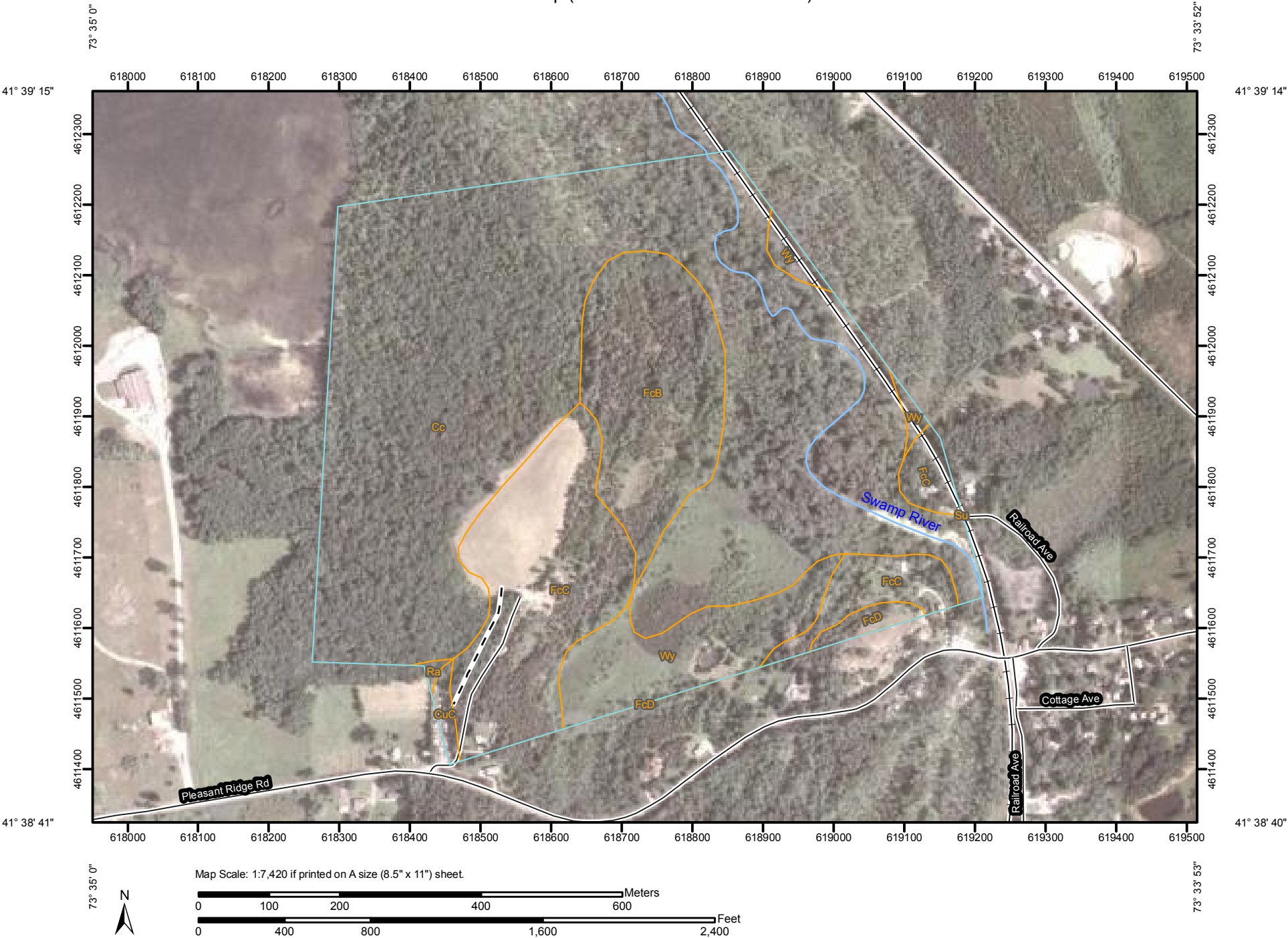
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# Soil Map

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The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.


Custom Soil Resource Report  
Soil Map (Slocum-Mostachetti Preserve)



# Custom Soil Resource Report

## MAP LEGEND






















### Area of Interest (AOI)




 Area of Interest (AOI)

### Soils




 Soil Map Units

### Special Point Features

 Blowout  
 Borrow Pit  
 Clay Spot  
 Closed Depression  
 Gravel Pit  
 Gravelly Spot  
 Landfill  
 Lava Flow  
 Marsh or swamp  
 Mine or Quarry  
 Miscellaneous Water  
 Perennial Water  
 Rock Outcrop  
 Saline Spot  
 Sandy Spot  
 Severely Eroded Spot  
 Sinkhole  
 Slide or Slip  
 Sodic Spot  
 Spoil Area  
 Stony Spot

 Very Stony Spot  
 Wet Spot  
 Other


### Special Line Features

 Gully  
 Short Steep Slope  
 Other






### Political Features

 Cities

### Water Features

 Streams and Canals

### Transportation

 Rails  
 Interstate Highways  
 US Routes  
 Major Roads  
 Local Roads

## MAP INFORMATION

Map Scale: 1:7,420 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>  
Coordinate System: UTM Zone 18N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Dutchess County, New York  
Survey Area Data: Version 9, Sep 21, 2012

Date(s) aerial images were photographed: 7/31/2006

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend (Slocum-Mostachetti Preserve)

Dutchess County, New York (NY027)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Cc	Carlisle muck	90.3	62.6%
CuC	Copake gravelly silt loam, rolling	0.7	0.5%
FcB	Farmington-Galway complex, undulating, very rocky	16.4	11.4%
FcC	Farmington-Galway complex, rolling, very rocky	24.4	16.9%
FcD	Farmington-Galway complex, hilly, very rocky	1.2	0.8%
Ra	Raynham silt loam	0.2	0.1%
Su	Sun silt loam	0.0	0.0%
Wy	Wayland silt loam	11.0	7.6%
<b>Totals for Area of Interest</b>		<b>144.3</b>	<b>100.0%</b>

## Map Unit Descriptions (Slocum-Mostachetti Preserve)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with

some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## Dutchess County, New York

### Cc—Carlisle muck

#### Map Unit Setting

*Elevation:* 250 to 1,000 feet

*Mean annual precipitation:* 41 to 47 inches

*Mean annual air temperature:* 45 to 50 degrees F

*Frost-free period:* 115 to 195 days

#### Map Unit Composition

*Carlisle and similar soils:* 80 percent

*Minor components:* 20 percent

#### Description of Carlisle

##### Setting

*Landform:* Swamps, marshes

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Talf

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Parent material:* Deep organic material

##### Properties and qualities

*Slope:* 0 to 2 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Very poorly drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.20 to 5.95 in/hr)

*Depth to water table:* About 0 inches

*Frequency of flooding:* None

*Frequency of ponding:* Frequent

*Available water capacity:* Very high (about 23.9 inches)

##### Interpretive groups

*Farmland classification:* Not prime farmland

*Land capability (nonirrigated):* 5w

*Hydrologic Soil Group:* A/D

##### Typical profile

*0 to 80 inches:* Muck

#### Minor Components

##### Canandaigua

*Percent of map unit:* 5 percent

*Landform:* Depressions

##### Wayland

*Percent of map unit:* 5 percent

*Landform:* Flood plains

##### Palms

*Percent of map unit:* 5 percent

*Landform:* Marshes, swamps



**Fluvaquents**

*Percent of map unit: 3 percent*

*Landform: Flood plains*

**Udifulvents**

*Percent of map unit: 2 percent*

**CuC—Copake gravelly silt loam, rolling**

**Map Unit Setting**

*Mean annual precipitation: 41 to 47 inches*

*Mean annual air temperature: 45 to 50 degrees F*

*Frost-free period: 115 to 195 days*

**Map Unit Composition**

*Copake and similar soils: 85 percent*

*Minor components: 15 percent*

**Description of Copake**

**Setting**

*Landform: Deltas, outwash plains, terraces*

*Landform position (two-dimensional): Shoulder*

*Landform position (three-dimensional): Tread*

*Down-slope shape: Convex*

*Across-slope shape: Convex*

*Parent material: Loamy over calcareous sandy and gravelly glaciofluvial deposits*

**Properties and qualities**

*Slope: 5 to 16 percent*

*Depth to restrictive feature: More than 80 inches*

*Drainage class: Well drained*

*Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high  
(0.57 to 5.95 in/hr)*

*Depth to water table: More than 80 inches*

*Frequency of flooding: None*

*Frequency of ponding: None*

*Calcium carbonate, maximum content: 15 percent*

*Available water capacity: Moderate (about 6.3 inches)*

**Interpretive groups**

*Farmland classification: Farmland of statewide importance*

*Land capability (nonirrigated): 3e*

*Hydrologic Soil Group: A*

**Typical profile**

*0 to 6 inches: Gravelly silt loam*

*6 to 36 inches: Gravelly loam*

*36 to 80 inches: Stratified very gravelly coarse sand to gravelly loamy fine sand*

**Minor Components**

**Hoosic**

*Percent of map unit: 10 percent*

**Fredon**

*Percent of map unit: 3 percent*

*Landform: Depressions*

**Halsey**

*Percent of map unit: 2 percent*

*Landform: Depressions*

**FcB—Farmington-Galway complex, undulating, very rocky**

**Map Unit Setting**

*Elevation: 100 to 1,000 feet*

*Mean annual precipitation: 41 to 47 inches*

*Mean annual air temperature: 45 to 50 degrees F*

*Frost-free period: 115 to 195 days*

**Map Unit Composition**

*Farmington and similar soils: 40 percent*

*Galway and similar soils: 30 percent*

*Minor components: 30 percent*

**Description of Farmington**

**Setting**

*Landform: Benches, ridges, till plains*

*Landform position (two-dimensional): Summit*

*Landform position (three-dimensional): Crest*

*Down-slope shape: Convex*

*Across-slope shape: Convex*

*Parent material: Loamy till or congeliturbate derived from limestone, dolomite, shale, and sandstone, and in many places mixed with wind and water deposits*

**Properties and qualities**

*Slope: 1 to 6 percent*

*Depth to restrictive feature: 10 to 20 inches to lithic bedrock*

*Drainage class: Somewhat excessively drained*

*Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)*

*Depth to water table: More than 80 inches*

*Frequency of flooding: None*

*Frequency of ponding: None*

*Calcium carbonate, maximum content: 5 percent*

*Available water capacity: Very low (about 2.1 inches)*

**Interpretive groups**

*Farmland classification: Not prime farmland*

## Custom Soil Resource Report

*Land capability (nonirrigated): 6s*  
*Hydrologic Soil Group: D*

### Typical profile

*0 to 7 inches: Loam*  
*7 to 15 inches: Very fine sandy loam*  
*15 to 19 inches: Unweathered bedrock*

### Description of Galway

#### Setting

*Landform: Benches, ridges, till plains*  
*Landform position (two-dimensional): Summit*  
*Landform position (three-dimensional): Crest*  
*Down-slope shape: Convex*  
*Across-slope shape: Convex*  
*Parent material: Calcareous loamy till*

#### Properties and qualities

*Slope: 1 to 6 percent*  
*Depth to restrictive feature: 20 to 40 inches to lithic bedrock*  
*Drainage class: Well drained*  
*Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)*  
*Depth to water table: More than 80 inches*  
*Frequency of flooding: None*  
*Frequency of ponding: None*  
*Calcium carbonate, maximum content: 25 percent*  
*Available water capacity: Low (about 4.2 inches)*

#### Interpretive groups

*Farmland classification: Not prime farmland*  
*Land capability (nonirrigated): 6s*  
*Hydrologic Soil Group: C*

### Typical profile

*0 to 6 inches: Gravelly loam*  
*6 to 30 inches: Gravelly loam*  
*30 to 31 inches: Gravelly loam*  
*31 to 35 inches: Unweathered bedrock*

### Minor Components

#### Georgia

*Percent of map unit: 10 percent*

#### Stockbridge

*Percent of map unit: 10 percent*

#### Rock outcrop

*Percent of map unit: 5 percent*

#### Massena

*Percent of map unit: 4 percent*

#### Sun

*Percent of map unit: 1 percent*  
*Landform: Depressions*

## **FcC—Farmington-Galway complex, rolling, very rocky**

### **Map Unit Setting**

*Elevation:* 100 to 1,000 feet

*Mean annual precipitation:* 41 to 47 inches

*Mean annual air temperature:* 45 to 50 degrees F

*Frost-free period:* 115 to 195 days

### **Map Unit Composition**

*Farmington and similar soils:* 40 percent

*Galway and similar soils:* 30 percent

*Minor components:* 30 percent

### **Description of Farmington**

#### **Setting**

*Landform:* Benches, ridges, till plains

*Landform position (two-dimensional):* Shoulder

*Landform position (three-dimensional):* Crest

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Loamy till or congeliturbate derived from limestone, dolomite, shale, and sandstone, and in many places mixed with wind and water deposits

#### **Properties and qualities**

*Slope:* 5 to 16 percent

*Depth to restrictive feature:* 10 to 20 inches to lithic bedrock

*Drainage class:* Somewhat excessively drained

*Capacity of the most limiting layer to transmit water (Ksat):* Very low (0.00 to 0.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum content:* 5 percent

*Available water capacity:* Very low (about 2.1 inches)

#### **Interpretive groups**

*Farmland classification:* Not prime farmland

*Land capability (nonirrigated):* 6s

*Hydrologic Soil Group:* D

#### **Typical profile**

*0 to 7 inches:* Loam

*7 to 15 inches:* Very fine sandy loam

*15 to 19 inches:* Unweathered bedrock

## Description of Galway

### Setting

*Landform:* Benches, ridges, till plains  
*Landform position (two-dimensional):* Shoulder  
*Landform position (three-dimensional):* Crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Calcareous loamy till

### Properties and qualities

*Slope:* 5 to 16 percent  
*Depth to restrictive feature:* 20 to 40 inches to lithic bedrock  
*Drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low (0.00 to 0.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 25 percent  
*Available water capacity:* Low (about 4.2 inches)

### Interpretive groups

*Farmland classification:* Not prime farmland  
*Land capability (nonirrigated):* 6s  
*Hydrologic Soil Group:* C

### Typical profile

*0 to 6 inches:* Gravelly loam  
*6 to 30 inches:* Gravelly loam  
*30 to 31 inches:* Gravelly loam  
*31 to 35 inches:* Unweathered bedrock

## Minor Components

### Georgia

*Percent of map unit:* 10 percent

### Stockbridge

*Percent of map unit:* 10 percent

### Rock outcrop

*Percent of map unit:* 5 percent

### Massena

*Percent of map unit:* 4 percent

### Sun

*Percent of map unit:* 1 percent  
*Landform:* Depressions

## **FcD—Farmington-Galway complex, hilly, very rocky**

### **Map Unit Setting**

*Elevation:* 100 to 1,000 feet

*Mean annual precipitation:* 41 to 47 inches

*Mean annual air temperature:* 45 to 50 degrees F

*Frost-free period:* 115 to 195 days

### **Map Unit Composition**

*Farmington and similar soils:* 40 percent

*Galway and similar soils:* 30 percent

*Minor components:* 30 percent

### **Description of Farmington**

#### **Setting**

*Landform:* Benches, ridges, till plains

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Loamy till or congeliturbate derived from limestone, dolomite, shale, and sandstone, and in many places mixed with wind and water deposits

#### **Properties and qualities**

*Slope:* 15 to 30 percent

*Depth to restrictive feature:* 10 to 20 inches to lithic bedrock

*Drainage class:* Somewhat excessively drained

*Capacity of the most limiting layer to transmit water (Ksat):* Very low (0.00 to 0.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum content:* 5 percent

*Available water capacity:* Very low (about 2.1 inches)

#### **Interpretive groups**

*Farmland classification:* Not prime farmland

*Land capability (nonirrigated):* 7s

*Hydrologic Soil Group:* D

#### **Typical profile**

*0 to 7 inches:* Loam

*7 to 15 inches:* Very fine sandy loam

*15 to 19 inches:* Unweathered bedrock

## Description of Galway

### Setting

*Landform:* Benches, ridges, till plains  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Calcareous loamy till

### Properties and qualities

*Slope:* 15 to 30 percent  
*Depth to restrictive feature:* 20 to 40 inches to lithic bedrock  
*Drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low (0.00 to 0.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 25 percent  
*Available water capacity:* Low (about 4.2 inches)

### Interpretive groups

*Farmland classification:* Not prime farmland  
*Land capability (nonirrigated):* 7s  
*Hydrologic Soil Group:* C

### Typical profile

*0 to 6 inches:* Gravelly loam  
*6 to 30 inches:* Gravelly loam  
*30 to 31 inches:* Gravelly loam  
*31 to 35 inches:* Unweathered bedrock

## Minor Components

### Stockbridge

*Percent of map unit:* 10 percent

### Sun

*Percent of map unit:* 5 percent  
*Landform:* Depressions

### Rock outcrop

*Percent of map unit:* 5 percent

### Georgia

*Percent of map unit:* 5 percent

### Massena

*Percent of map unit:* 5 percent

## **Ra—Raynham silt loam**

### **Map Unit Setting**

*Elevation:* 50 to 500 feet

*Mean annual precipitation:* 41 to 47 inches

*Mean annual air temperature:* 45 to 50 degrees F

*Frost-free period:* 115 to 195 days

### **Map Unit Composition**

*Raynham and similar soils:* 85 percent

*Minor components:* 15 percent

### **Description of Raynham**

#### **Setting**

*Landform:* Depressions

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Parent material:* Glaciolacustrine, eolian, or old alluvial deposits, comprised mainly of silt and very fine sand

#### **Properties and qualities**

*Slope:* 0 to 3 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Somewhat poorly drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)

*Depth to water table:* About 6 to 24 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum content:* 5 percent

*Available water capacity:* High (about 11.7 inches)

#### **Interpretive groups**

*Farmland classification:* Prime farmland if drained

*Land capability (nonirrigated):* 4w

*Hydrologic Soil Group:* C/D

#### **Typical profile**

*0 to 8 inches:* Silt loam

*8 to 30 inches:* Silt loam

*30 to 80 inches:* Very fine sandy loam

### **Minor Components**

#### **Raynham, poorly drained**

*Percent of map unit:* 3 percent



**Canandaigua**

*Percent of map unit: 3 percent*

*Landform: Depressions*

**Scio**

*Percent of map unit: 3 percent*

**Rhinebeck**

*Percent of map unit: 1 percent*

**Massena**

*Percent of map unit: 1 percent*

**Sun**

*Percent of map unit: 1 percent*

*Landform: Depressions*

**Kingsbury**

*Percent of map unit: 1 percent*

**Livingston**

*Percent of map unit: 1 percent*

*Landform: Depressions*

**Unadilla**

*Percent of map unit: 1 percent*

**Su—Sun silt loam**

**Map Unit Setting**

*Elevation: 600 to 1,800 feet*

*Mean annual precipitation: 41 to 47 inches*

*Mean annual air temperature: 45 to 50 degrees F*

*Frost-free period: 115 to 195 days*

**Map Unit Composition**

*Sun and similar soils: 80 percent*

*Minor components: 20 percent*

**Description of Sun**

**Setting**

*Landform: Depressions*

*Landform position (two-dimensional): Toeslope*

*Landform position (three-dimensional): Base slope*

*Down-slope shape: Concave*

*Across-slope shape: Concave*

*Parent material: Loamy till derived primarily from limestone and sandstone, with a component of schist, shale, or granitic rocks in some areas*

**Properties and qualities**

*Slope: 0 to 3 percent*

*Depth to restrictive feature: More than 80 inches*

## Custom Soil Resource Report

*Drainage class:* Poorly drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)

*Depth to water table:* About 0 inches

*Frequency of flooding:* None

*Frequency of ponding:* Occasional

*Calcium carbonate, maximum content:* 15 percent

*Available water capacity:* Moderate (about 6.2 inches)

### **Interpretive groups**

*Farmland classification:* Farmland of statewide importance

*Land capability (nonirrigated):* 4w

*Hydrologic Soil Group:* C/D

### **Typical profile**

*0 to 4 inches:* Silt loam

*4 to 22 inches:* Loam

*22 to 80 inches:* Gravelly loam

### **Minor Components**

#### **Sun, stony**

*Percent of map unit:* 5 percent

*Landform:* Depressions

#### **Canandaigua**

*Percent of map unit:* 5 percent

*Landform:* Depressions

#### **Massena**

*Percent of map unit:* 5 percent

#### **Palms**

*Percent of map unit:* 5 percent

*Landform:* Marshes, swamps

## **Wy—Wayland silt loam**

### **Map Unit Setting**

*Elevation:* 200 to 1,500 feet

*Mean annual precipitation:* 41 to 47 inches

*Mean annual air temperature:* 45 to 50 degrees F

*Frost-free period:* 115 to 195 days

### **Map Unit Composition**

*Wayland and similar soils:* 80 percent

*Minor components:* 20 percent

### **Description of Wayland**

#### **Setting**

*Landform:* Flood plains

## Custom Soil Resource Report

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Dip

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Parent material:* Silty and clayey alluvium washed from uplands that contain some calcareous drift

### Properties and qualities

*Slope:* 0 to 3 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Poorly drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)

*Depth to water table:* About 0 inches

*Frequency of flooding:* Frequent

*Frequency of ponding:* Frequent

*Calcium carbonate, maximum content:* 1 percent

*Available water capacity:* High (about 11.0 inches)

### Interpretive groups

*Farmland classification:* Not prime farmland

*Land capability (nonirrigated):* 5w

*Hydrologic Soil Group:* C/D

### Typical profile

*0 to 9 inches:* Silt loam

*9 to 80 inches:* Silt loam

### Minor Components

#### Linlithgo

*Percent of map unit:* 5 percent

#### Pawling

*Percent of map unit:* 5 percent

*Landform:* Depressions

#### Fluvaquents

*Percent of map unit:* 3 percent

*Landform:* Flood plains

#### Palms

*Percent of map unit:* 3 percent

*Landform:* Marshes, swamps

#### Udifluvents

*Percent of map unit:* 2 percent

#### Carlisle

*Percent of map unit:* 2 percent

*Landform:* Marshes, swamps

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Appendix B:

Vascular Plants



## APPENDIX B:

### VASCULAR PLANT SPECIES OBSERVED AT SLOCUM-MOSTACHETTI PRESERVE

[Source: Field notes and collections, C.R. Mangels, 2007-2009]

<u>Species name<sup>1</sup></u>	<u>Common name<sup>2</sup></u>	<u>Habitat type/location<sup>3</sup></u>
<i>Acer platanoides</i> *	Norway maple	ROW
<i>Acer rubrum</i>	Red maple	WS
<i>Acer saccharum</i>	Sugar maple	UF
<i>Achillea millefolium</i> *	Yarrow	UO
<i>Acorus ?americanus</i>	Sweet flag	WO
<i>Actaea pachypoda</i>	White baneberry	UF
<i>Actaea rubra</i>	Red baneberry	UF
<i>Adiantum pedatum</i>	Maidenhair fern	UF
<i>Ageratina altissima</i> var. <i>altissima</i>	White snakeroot	UF
<i>Agrimonia gryposepala</i>	Tall hairy agrimony	WF
<i>Agrostis</i> species	Hairgrass	WS
<i>Agrostis stolonifera</i> *	Creeping bent	WO
<i>Ailanthus altissima</i> *	Tree-of-heaven	ROW
<i>Alisma</i> species	Water-plantain	WO
<i>Alliaria petiolata</i> *	Garlic mustard	WS
<i>Allium tricoccum</i>	Wild leek	WF
<i>Alnus incana</i> ssp. <i>rugosa</i>	Alder	WO
<i>Ambrosia artemisiifolia</i>	Common ragweed	UO
<i>Amelanchier ?laevis</i>	Service-berry	WF
<i>Amphicarpaea bracteata</i>	Hog-peanut	WF, WO
<i>Anaphalis margaritacea</i>	Pearly everlasting	UO
<i>Andropogon gerardii</i>	Big bluestem	UO
<i>Anemone quinquefolia</i>	Wood anemone	WF
<i>Anemone canadensis</i>	Canada anemone	UO
<i>Angelica atropurpurea</i>	Purple-stem angelica	WO
<i>Antennaria plantaginifolia</i>	Plantain-leaf pussy-toes	UO
<i>Anthoxanthum odoratum</i> *	Sweet vernal grass	WS
<i>Apios americana</i>	Ground-nut	WO
<i>Apocynum cannabinum</i>	Dogbane	UO
<i>Aquilegia canadensis</i>	Columbine	UF
<i>Aralia nudicaulis</i>	Wild sarsaparilla	UF
<i>Arctium minus</i> *	Burdock	ROW
<i>Arisaema triphyllum</i>	Jack-in-the-pulpit	WF
<i>Aronia</i> species	Chokeberry	WF
<i>Arrhenatherum elatius</i> *	Tall oatgrass	ROW
<i>Artemisia vulgaris</i> *	Mugwort	ROW
<i>Asclepias incarnata</i>	Swamp milkweed	WO
<i>Asclepias syriaca</i>	Common milkweed	UO
<i>Asparagus officinalis</i> *	Common asparagus	ROW
<i>Asplenium platyneuron</i>	Ebony spleenwort	UF, UO
<i>Asplenium trichomanes</i>	Maidenhair spleenwort	UF

<i>Athyrium filix-femina</i>	Lady fern	WF
<i>Barbarea vulgaris</i> *	Winter-cress	UO
<i>Berberis thunbergii</i> *	Japanese barberry	UF, WF
<i>Betula alleghaniensis</i>	Yellow birch	WF
<i>Betula lenta</i>	Black birch	UF
<i>Betula populifolia</i>	Grey birch	WF
<i>Bidens ?tripartita</i>	Three-lobed beggar-ticks	WO
<i>Boechera laevigata</i>	Smooth rock-cress	UO
<i>Boehmeria cylindrica</i>	False-nettle	WF, WO
<i>Botrychium virginianum</i>	Rattlesnake fern	UF
<i>Brachyelytrum erectum</i>	Bearded shorthusk	WF
<i>Bromus inermis</i> *	Smooth brome	MF
<i>Bromus ciliatus</i>	Canada brome	WO
<i>Calamagrostis canadensis</i>	Bluejoint grass	WO
<i>Callitriche</i> species	Water-starwort	SR
<i>Callitriche stagnalis</i> *	Pond water-starwort	WF
<i>Caltha palustris</i>	Marsh marigold	WF
<i>Calystegia sepium</i>	Hedge-bindweed	UO, WO
<i>Campanula aparinoides</i>	Marsh bellflower	WO
<i>Capsella bursa-pastoris</i> *	Common shepherd's-purse	ROW
<i>Cardamine diphylla</i>	Two-leaf toothwort	WF
<i>Cardamine bulbosa</i>	Bulbous bitter-cress	WF
<i>Cardamine hirsuta</i> *	Hairy bitter-cress	ROW
<i>Carex albursina</i>	White bear sedge	UF
<i>Carex alopecoidea</i>	Foxtail sedge	WO
<i>Carex appalachica</i>	Appalachian sedge	UF
<i>Carex aurea</i>	Golden-fruited sedge	WO
<i>Carex blanda</i>	Woodland sedge	UF
<i>Carex brevior</i>	Fescue sedge	UO
<i>Carex bromoides</i>	Brome-like sedge	WF, WO
<i>Carex bushii</i> †	Bush's sedge	UO
<i>Carex comosa</i>	Bristly sedge	WO
<i>Carex crinita</i>	Fringed sedge	WF, WO
<i>Carex cristatella</i>	Crested sedge	WO, WF
<i>Carex digitalis</i>	Slender woodland sedge	UF
<i>Carex eburnea</i>	Bristleleaf sedge	UF, UO
<i>Carex flacca</i> *	Heath sedge	UO
<i>Carex flava</i>	Yellow sedge	WO
<i>Carex gracillima</i>	Graceful sedge	WF
<i>Carex granularis</i>	Limestone meadow sedge	WO
<i>Carex grisea</i>	Gray sedge	UF, UO
<i>Carex hirsutella</i>	Hirsute sedge	UO
<i>Carex hystericina</i>	Porcupine sedge	WO
<i>Carex interior</i>	Inland sedge	WO
<i>Carex intumescens</i>	Bladder sedge	WF, WO
<i>Carex lacustris</i>	Lake-bank sedge	WO
<i>Carex laxiflora</i>	Broad loose-flower sedge	UF
<i>Carex leptalea</i>	Bristly-stalk sedge	WO



<i>Carex leptoneura</i>	Finely-nerved sedge	UF
<i>Carex lupulina</i>	Hop sedge	WF
<i>Carex lurida</i>	Shallow sedge	WF, WO
<i>Carex normalis</i>	Greater straw sedge	WO
<i>Carex pallescens</i>	Pale sedge	UO
<i>Carex pedunculata</i>	Pedunculate sedge	WF
<i>Carex pennsylvanica</i>	Pennsylvania sedge	WS
<i>Carex platyphylla</i>	Broad-leaved sedge	UF
<i>Carex radiata</i>	Stellate sedge	WF
<i>Carex rosea</i>	Rosy sedge	WS
<i>Carex scoparia</i>	Broom sedge	WF
<i>Carex stricta</i>	Tussock sedge	WF, WO
<i>Carex swanii</i>	Swan sedge	UF
<i>Carex tenera</i>	Quill Sedge	WO
<i>Carex tetanica</i>	Rigid sedge	WO
<i>Carex viridula</i> ssp. <i>viridula</i>	Little green sedge	WO
<i>Carex vulpinoidea</i>	Fox sedge	WO
<i>Carpinus caroliniana</i>	Hornbeam	WF, UF
<i>Carya cordiformis</i>	Bitternut	WF
<i>Carya ovata</i>	Shagbark hickory	WF, UF
<i>Catalpa</i> species *	Catalpa	
<i>Celastrus orbiculatus</i> *	Oriental bittersweet	WS
<i>Centaurea stoebe</i> ssp. <i>micranthos</i> *	Spotted knapweed	UO, MF
<i>Cerastium dubium</i> *	Chickweed	UO
<i>Ceratophyllum demersum</i>	Coontail	SR
<i>Chamaesyce maculata</i>	Spotted spurge	ROW
<i>Chelidonium majus</i> *	Greater celandine	UF
<i>Chelone glabra</i>	Turtlehead	WF
<i>Cichorium intybus</i> *	Chicory	UO
<i>Chimaphila maculata</i>	Spotted wintergreen	UF
<i>Chrysosplenium americanum</i>	Golden saxifrage	WF
<i>Cicuta bulbifera</i>	Water-hemlock	WF
<i>Cicuta maculata</i>	Spotted cowbane	WF
<i>Cinna arundinacea</i>	Drooping wood reed	WF
<i>Circaea lutetiana</i>	Enchanter's nightshade	UF
<i>Cirsium ?muticum</i>	Swamp-thistle	WO
<i>Cirsium vulgare</i> *	Bull thistle	UO
<i>Clematis virginiana</i>	Virgin's-bower	WO, UO
<i>Clethra alnifolia</i>	Sweet pepper-bush	WF, WO
<i>Clinopodium vulgare</i> *	Wild basil	UO
<i>Collinsonia canadensis</i>	Richweed	WF
<i>Conioselinum chinense</i>	Hemlock-parsley	WF
<i>Conyza canadensis</i> var. <i>canadensis</i>	Horseweed	UO
<i>Cornus alternifolia</i>	Alternate-leaf dogwood	UF
<i>Cornus amomum</i>	Silky dogwood	WO
<i>Cornus racemosa</i>	Gray dogwood	WS
<i>Cornus sericea</i> ssp. <i>sericea</i>	Red osier dogwood	WO
<i>Corylus cornuta</i>	Beaked hazel	UF

<i>Cryptotaenia canadensis</i>	Honewort	UF
<i>Cuscuta ?compacta</i>	Dodder	WF
<i>Cyperus strigosus</i>	Galingale	WO
<i>Dactylis glomerata</i> *	Orchard grass	UO, MF
<i>Danthonia compressa</i>	Northern oat grass	UO
<i>Danthonia spicata</i>	Poverty-grass	UO
<i>Dasiphora fruticosa</i> ssp. <i>floribunda</i>	Shrubby cinquefoil	WO, UO
<i>Datura stramonium</i> *	Jimsonweed	ROW
<i>Daucus carota</i> *	Queen Anne's-lace	UO, MF
<i>Decodon verticillatus</i>	Water loosestrife	SR
<i>Dennstaedtia punctilobula</i>	Hay-scented fern	UF
<i>Deparia acrostichoides</i>	Silvery spleenwort	WF
<i>Desmodium</i> species	Tick-clover	UO
<i>Dianthus armeria</i> *	Deptford pink	UO
<i>Dichanthelium acuminatum</i> ssp. <i>acuminatum</i>	Panic grass	UO
<i>Dichanthelium acuminatum</i> ssp. <i>fasciculatum</i>	Panic grass	UO
<i>Dichanthelium dichotomum</i> ssp. <i>dichotomum</i>	Panic grass	UO
<i>Doellingeria umbellata</i>	Tall flat-topped white aster	WO
<i>Draba verna</i> *	Whitlow-grass	UO
<i>Dryopteris carthusiana</i>	Spinulose wood fern	WF
<i>Dryopteris clintoniana</i>	Clinton wood fern	WF
<i>Dryopteris cristata</i>	Crested wood fern	WF
<i>Dryopteris intermedia</i>	Common wood fern	WF
<i>Dryopteris marginalis</i>	Marginal wood fern	UF
<i>Dulichium arundinaceum</i>	Three-way sedge	WO
<i>Echinochloa</i> species	Barnyard grass	ROW
<i>Echinocystis lobata</i>	Prickly cucumber	ROW
<i>Elaeagnus umbellata</i> *	Autumn olive	UO
<i>Eleocharis</i> species	Spikerush	WO
<i>Eleusine indica</i> *	Goosegrass	ROW
<i>Elymus hystrix</i>	Bottlebrush	WF
<i>Elymus repens</i> *	Creeping wild-rye	MF
<i>Elymus virginicus</i> var. <i>intermedius</i>	Virginia wild-rye	WO
<i>Epifagus virginiana</i>	Beech drops	UF
<i>Epigaea repens</i>	Trailing arbutus	UF
<i>Epilobium coloratum</i>	Purple-leaf willow-herb	WO
<i>Epipactis helleborine</i> *	Helleborine	UF
<i>Equisetum arvense</i>	Common horsetail	WS
<i>Equisetum fluviatile</i>	Water horsetail	WF, WO
<i>Equisetum hyemale</i>	Scouring rush	WF, WO
<i>Equisetum sylvaticum</i>	Woodland horsetail	WF
<i>Equisetum x litorale</i>	Horsetail	WF, WO
<i>Eragrostis frankii</i>	Lacegrass	ROW
<i>Eragrostis minor</i> *	Little lovegrass	ROW
<i>Eragrostis pectinacea</i> var. <i>pectinacea</i>	Lovegrass	ROW
<i>Eragrostis spectabilis</i>	Purple lovegrass	UO
<i>Erechtites hieracifolia</i> var. <i>hieracifolia</i>	American burnweed	UO
<i>Erigeron annuus</i>	Daisy-fleabane	UO

<i>Erigeron pulchellus</i>	Robin's-plantain	UO
<i>Erigeron strigosus</i> var. <i>strigosus</i>	Prairie fleabane	UO
<i>Euonymus europaeus</i> *	European spindletree	UF
<i>Eupatorium perfoliatum</i>	Boneset	WO
<i>Eurybia divaricata</i>	White wood aster	UF
<i>Eurybia macrophylla</i>	Bigleaf aster	WO
<i>Euthamia graminifolia</i>	Flat-top goldenrod	UO, WO
<i>Eutrochium maculatum</i>	Spotted Joe-pye weed	WO
<i>Fallopia scandens</i>	Climbing false buckwheat	WO
<i>Festuca ?ovina</i> *	Sheep fescue	UO
<i>Festuca subverticillata</i>	Nodding fescue	UF
<i>Forsythia</i> species *	Forsythia	ROW
<i>Fragaria virginiana</i>	Wild strawberry	UO
<i>Fraxinus americana</i>	White ash	UF
<i>Fraxinus nigra</i>	Black ash	WF, WO
<i>Fraxinus pensylvanica</i>	Green ash	WF
<i>Galium aparine</i>	Cleavers	UF
<i>Galium mollugo</i> *	White bedstraw	WS
<i>Galium ?lanceolatum</i>	Wild-licorice	UF
<i>Galium obtusum</i>	Marsh bedstraw	WO
<i>Galium ?sylvaticum</i> *	Scotch-mist	UO
<i>Galium tinctorium</i>	Bedstraw	WF
<i>Galium ?trifidum</i>	Small bedstraw	WF
<i>Galium triflorum</i>	Sweet-scented bedstraw	UF, WF
<i>Galium verum</i> *	Yellow bedstraw	LF, ROW
<i>Gentianopsis crinita</i>	Greater fringed gentian	UO
<i>Geranium maculatum</i>	Wild geranium	UF
<i>Geranium sibiricum</i> *	Siberian geranium	ROW
<i>Geum canadense</i>	White avens	WF
<i>Glyceria striata</i> var. <i>striata</i>	Fowl manna grass	WF, WO
<i>Gnaphalium obtusifolium</i>	Cudweed	UO
<i>Gratiola neglecta</i>	Mud-hyssop	ROW
<i>Hackelia virginiana</i>	Stickseed	UO
<i>Hamamelis virginiana</i>	Witch-hazel	WF, UF
<i>Hedeoma hispida</i> †	Rough false pennyroyal	UO
<i>Helenium autumnale</i>	Common sneezeweed	WO
<i>Hemerocallis fulva</i> *	Orange daylily	ROW
<i>Hesperis matronalis</i> *	Dame's-rocket	UO, WF
<i>Heuchera americana</i>	Alum-root	UO
<i>Hieracium</i> species	Hawkweed	UO
<i>Hieracium piloselloides</i> *	King-devil	UO
<i>Houstonia caerulea</i>	Bluets	UO
<i>Hydrocotyle americana</i>	Pennywort	WO
<i>Hypericum boreale</i>	Northern dwarf St. John's-wort	WO
<i>Hypericum punctatum</i>	St. John's-wort	UO
<i>Ilex verticillata</i>	Winterberry	WF, WO
<i>Impatiens capensis</i>	Spotted jewelweed	WF, WO
<i>Impatiens pallida</i>	Pale jewelweed	UF

<i>Iris versicolor</i>	Blue flag	WO
<i>Juglans nigra</i>	Black walnut	UF
<i>Juncus brachycephalus</i>	Small-headed rush	WO
<i>Juncus dudleyi</i>	Dudley's rush	WO
<i>Juncus effusus</i>	Soft rush	WO
<i>Juncus tenuis</i>	Slender yard-rush	WS
<i>Juniperus virginiana</i> var. <i>virginiana</i>	Red cedar	WS
<i>Kalmia angustifolia</i>	Sheep laurel	UO
<i>Laportea canadensis</i>	Wood-nettle	WF
<i>Lapsana communis</i> *	Common nipplewort	ROW
<i>Larix laricina</i>	Tamarack	WF
<i>Lemna minor</i>	Duckweed	WF, SR
<i>Leersia oryzoides</i>	Rice cutgrass	WO
<i>Leersia virginica</i>	Whitegrass	WF
<i>Leonurus cardiaca</i> *	Motherwort	ROW
<i>Lepidium campestre</i> *	Field-cress	ROW
<i>Lepidium virginicum</i>	Wild peppergrass	UO
<i>Leucanthemum vulgare</i> *	Ox-eye daisy	UO
<i>Ligustrum obtusifolium</i> *	Border privet	ROW
<i>Lilium ?superbum</i>	Turk's-cap lily	WF
<i>Linaria vulgaris</i> *	Common toadflax	UO
<i>Lindera benzoin</i>	Spicebush	WF
<i>Liparis loeselii</i>	Bog twayblade	UO
<i>Lobelia cardinalis</i>	Cardinal-flower	WO
<i>Lobelia inflata</i>	Indian-tobacco	UO
<i>Lobelia kalmii</i>	Kalm's lobelia	WO
<i>Lobelia siphilitica</i>	Great blue lobelia	WO
<i>Lobelia spicata</i>	Pale-spiked lobelia	UO
<i>Lonicera dioica</i>	Wild honeysuckle	ROW
<i>Lonicera morrowii</i> *	Fly honeysuckle	WS
<i>Lonicera x bella</i> *	Fly honeysuckle	WS (?)
<i>Lotus corniculatus</i> *	Bird's-foot trefoil	MF
<i>Ludwigia palustris</i>	Water purslane	WF
<i>Lychnis flos-cuculi</i> *	Ragged-robin	UO
<i>Lycopus americanus</i>	American bugleweed	WF, WO
<i>Lycopus uniflorus</i>	Northern bugleweed	WF, WO
<i>Lyonia ligustrina</i>	Maleberry	WO
<i>Lysimachia ciliata</i>	Fringed loosestrife	WF, WO
<i>Lysimachia nummularia</i> *	Moneywort	WF, WO
<i>Lysimachia thyrsiflora</i>	Tufted loosestrife	WO
<i>Lythrum salicaria</i> *	Purple loosestrife	WO, WF
<i>Maianthemum canadense</i>	False lily-of-the-valley	WF, UF
<i>Matricaria discoidea</i> *	Pineapple-weed	ROW
<i>Malus ?baccata</i> *	Siberian crabapple	UO
<i>Malus pumila</i> *	Common apple	UF, UO
<i>Medicago sativa</i> *	Yellow alfalfa	ROW
<i>Melilotus alba</i> *	White sweet-clover	WS
<i>Menispermum canadense</i>	Moonseed	UF

<i>Mentha ?canadensis</i> *	Canadian mint	WO
<i>Mikania scandens</i>	Climbing boneset	WO
<i>Mitchella repens</i>	Partridgeberry	UF
<i>Mitella diphylla</i>	Miterwort	WF
<i>Moebringia lateriflora</i>	Blunt-leaf sandwort	WF, WO
<i>Monarda fistulosa</i>	Horsemint	UO
<i>Morus alba</i> *	White mulberry	ROW
<i>Muhlenbergia glomerata</i>	Spiked muhly	WF, WO
<i>Muhlenbergia sobolifera</i>	Cliff muhly	UF, WF
<i>Muhlenbergia schreberi</i>	Nimble-will	UO
<i>Myosotis ?scorpioides</i> *	Forget-me-not	WF
<i>Myosoton aquaticum</i> *	Giant chickweed	ROW
<i>Myrica pensylvanica</i>	Bayberry	UO
<i>Myriophyllum</i> species	Water milfoil	SR
<i>Nasturtium officinale</i> *	Water-cress	WF
<i>Nuphar</i> species	Yellow pond-lily	SR
<i>Oclemena acuminata</i>	Mountain aster	UF
<i>Oenothera ?biennis</i>	Common evening-primrose	UO
<i>Onoclea sensibilis</i>	Sensitive fern	WF, WO
<i>Origanum vulgare</i> *	Wild marjoram	UO
<i>Osmorhiza</i> species	Sweet cicely	UF
<i>Osmunda cinnamomea</i>	Cinnamon fern	WF, WO
<i>Osmunda regalis</i>	Royal fern	WF, WO
<i>Ostrya virginiana</i>	Hop hornbeam	UF
<i>Oxalis ?stricta</i>	Lady's-sorrel	UO
<i>Packera aurea</i>	Golden ragwort	WF, WO
<i>Packera obovata</i>	Ragwort	WF
<i>Panicum capillare</i>	Old witch panic-grass	UO
<i>Panicum rigidulum</i>	Redtop panic-grass	WO
<i>Parnassia glauca</i>	Carolina Grass-of-Parnassus	WO
<i>Parthenocissus quinquefolia</i>	Virginia creeper	WS
<i>Paspalum setaceum</i> var. <i>muhlenbergii</i>	Slender beadgrass	UO
<i>Pastinaca sativa</i> *	Wild parsnip	ROW
<i>Peltandra virginica</i>	Arrow leaf	WF
<i>Penthorum sedoides</i>	Stone ditch-crop	WO
<i>Persicaria arifolia</i>	Halberd-leaf tear thumb	WO
<i>Persicaria longiseta</i> *	Creeping smartweed	WS
<i>Persicaria punctata</i>	Dotted smartweed	WF, WO
<i>Persicaria sagittata</i>	Arrow-leaf tear thumb	WO, WF
<i>Persicaria virginiana</i>	Jumpseed	UF
<i>Phalaris arundinacea</i>	Reed canary-grass	WO
<i>Phegopteris hexagonoptera</i>	Broad beech fern	WF
<i>Pbleum pratense</i> *	Timothy	MF
<i>Phragmites australis</i> *	Common reed	WF, WO
<i>Phryma leptostachya</i>	Lopseed	UF
<i>Physalis ?heterophylla</i>	Clammy ground-cherry	UO
<i>Phytolacca americana</i>	Pokeweed	UO
<i>Pilea pumila</i>	Clearweed	WF, WO

<i>Pinus strobus</i>	White pine	WF, UF
<i>Pinus sylvestris</i> *	Scots pine	UO
<i>Plantago lanceolata</i> *	English plantain	UO
<i>Plantago rugelii</i>	Pale plantain	UO
<i>Platanthera lacera</i>	Green fringed orchis	UO
<i>Platanus occidentalis</i>	Sycamore	WF
<i>Poa compressa</i> *	Canada bluegrass	UO
<i>Poa pratensis</i> *	Kentucky bluegrass	MF
<i>Poa trivialis</i> *	Rough bluegrass	WF, WO
<i>Polygala verticillata</i> var. <i>verticillata</i>	Whorled milkwort	UO
<i>Polygonatum biflorum</i>	Small Solomon's-seal	UF
<i>Polygonum aviculare</i> *	Knotweed	ROW
<i>Polystichum acrostichoides</i>	Christmas fern	UF
<i>Pontederia cordata</i>	Pickereel-weed	SR
<i>Populus deltoides</i>	Cottonwood	WF
<i>Populus grandidentata</i>	Big tooth aspen	UF, WF
<i>Populus tremuloides</i>	Trembling aspen	UF
<i>Potamogeton</i> species	Pondweed	SR
<i>Potentilla recta</i> *	Sulphur cinquefoil	UO
<i>Potentilla simplex</i>	Common cinquefoil	UO
<i>Prenanthes alba</i>	White rattlesnake-root	UF
<i>Prunella vulgaris</i> *	Self-heal	WS
<i>Prunus ?avium</i> *	Sweet cherry	UF
<i>Prunus serotina</i>	Black cherry	UF
<i>Prunus virginiana</i>	Choke cherry	UF
<i>Pteridium aquilinum</i>	Bracken	UO
<i>Pycnanthemum tenuifolium</i>	Mountain-mint	UO
<i>Pycnanthemum</i> species	Mountain-mint	UO
<i>Pyrola rotundifolia</i>	Shinleaf	UF
<i>Quercus alba</i>	White oak	UF
<i>Quercus bicolor</i>	Swamp white oak	WF
<i>Quercus macrocarpa</i>	Bur oak	WF, UF
<i>Quercus montana</i>	Chestnut oak	UF
<i>Quercus muehlenbergii</i>	Chinkapin oak	UF
<i>Quercus rubra</i>	Red oak	UF
<i>Quercus velutina</i>	Black oak	UF
<i>Ranunculus abortivus</i>	Kidney-leaf crowfoot	UO
<i>Ranunculus bulbosus</i> *	Bulbous crowfoot	UF
<i>Ranunculus hispidus</i> var. <i>nitidus</i> †	Swamp buttercup	WF
<i>Ranunculus fascicularis</i>	Early buttercup	UF
<i>Ranunculus recurvatus</i>	Hooked buttercup	UF
<i>Ranunculus</i> species	Crowfoot	WO
<i>Rhamnus alnifolia</i>	Alderleaf buckthorn	WF
<i>Rhamnus cathartica</i> *	Common buckthorn	WS
<i>Rhododendron viscosum</i>	Swamp azalea	WO
<i>Rhus glabra</i>	Smooth sumac	UO
<i>Rhus typhina</i>	Staghorn sumac	UO
<i>Ribes americanum</i>	Wild black currant	WF

<i>Ribes hirtellum</i>	Northern gooseberry	WO
<i>Rorippa ?sylvestris</i> *	Creeping yellow-cress	UO
<i>Rosa carolina</i>	Pasture rose	UO, WO
<i>Rosa multiflora</i> *	Multiflora rose	WS
<i>Rosa palustris</i>	Swamp rose	WO
<i>Rubus allegheniensis</i>	Northern blackberry	UO
<i>Rubus ?flagellaris</i>	Northern dewberry	UO
<i>Rubus hispidus</i>	Swamp dewberry	WF
<i>Rubus occidentalis</i>	Black raspberry	UF
<i>Rubus odoratus</i>	Purple flowering raspberry	UF
<i>Rubus pubescens</i>	Dwarf raspberry	WO
<i>Rudbeckia hirta</i> *	Black-eyed Susan	UO
<i>Rumex acetosella</i> *	Sheep sorrel	UO
<i>Sagittaria ?latifolia</i>	Arrowhead	SR
<i>Salix alba</i> *	Beaked willow	WF, WO
<i>Salix ?discolor</i>	Pussy willow	WF
<i>Salix ?humilis</i>	Gray willow	UO
<i>Salix ?nigra</i>	Black willow	WF
<i>Salix sericea</i>	Silky willow	WO
<i>Sambucus canadensis</i>	Black elderberry	WF, WO
<i>Sanicula species</i>	Snakeroot	UF
<i>Saponaria officinalis</i> *	Soapwort	ROW
<i>Schedonorus arundinaceus</i> *	Tall fescue	MF
<i>Schedonorus pratensis</i> *	Meadow fescue	MF
<i>Schizachyrium scoparium</i>	Little blue-stem	UO
<i>Schoenoplectus tabernaemontani</i>	Soft-stem bulrush	WO
<i>Scirpus atrovirens</i>	Bulrush	WF, WO
<i>Scirpus cyperinus</i>	Wool-grass	WO
<i>Scirpus hattorianus</i>	Bulrush	WF
<i>Scirpus pendulus</i>	Bulrush	WO
<i>Scutellaria galericulata</i>	Hooded skullcap	WO
<i>Scutellaria lateriflora</i>	Common skullcap	WO
<i>Selaginella apoda</i>	Creeping spike-moss	WO
<i>Setaria pumila</i> *	Yellow foxtail	ROW
<i>Silene latifolia</i> *	White campion	ROW
<i>Silene vulgaris</i> *	Bladder-campion	UO
<i>Sisyrinchium montanum</i> var. <i>montanum</i>	Blue-eyed grass	UO
<i>Smilax herbacea</i>	Carrion-flower	UO
<i>Solanum carolinense</i>	Carolina horse-nettle	UO
<i>Solanum dulcamara</i> *	Climbing nightshade	WF
<i>Solidago caesia</i>	Blue-stem goldenrod	UF, WF
<i>Solidago canadensis</i>	Canada goldenrod	UO
<i>Solidago flexicaulis</i>	Zigzag goldenrod	WF
<i>Solidago gigantea</i>	Giant goldenrod	UO
<i>Solidago juncea</i>	Early goldenrod	UO
<i>Solidago nemoralis</i>	Gray goldenrod	UO
<i>Solidago patula</i>	Spreading goldenrod	WF, WO
<i>Solidago rugosa</i>	Tall hairy goldenrod	WS

<i>Solidago uliginosa</i>	Bog goldenrod	WO
<i>Sonchus</i> species *	Sow thistle	UF
<i>Sorghastrum nutans</i>	Yellow Indian-grass	UO
<i>Sparganium eurycarpum</i>	Large	
<i>Sparganium</i> species	Bur-reed	WO
<i>Sphenopholis obtusata</i> †	Wedge-grass	WO
<i>Spiraea alba</i> var. <i>latifolia</i>	Meadow-sweet	WO
<i>Spiranthes lacera</i> var. <i>lacera</i>	Slender lady's-tresses	UO
<i>Spiranthes lucida</i>	Shining lady's-tresses	WO
<i>Sporobolus compositus</i>	Dropseed	UO
<i>Sporobolus vaginiflorus</i>	Poverty-grass	UO
<i>Symphyotrichum ericoides</i>	White heath aster	UO
<i>Symphyotrichum lanceolatum</i>	Tall white aster	UO
<i>Symphyotrichum lateriflorum</i>	Calico aster	UO
<i>Symphyotrichum novae-angliae</i>	New England aster	UO
<i>Symphyotrichum novi-belgii</i>	New York aster	WO
<i>Symphyotrichum patens</i> var. <i>patens</i>	Zigzag aster	UO
<i>Symphyotrichum pilosus</i> ?var. <i>pringlei</i>	Heath aster	UO
<i>Symphyotrichum puniceus</i>	Purple-stemmed aster	WF, WO
<i>Symplocarpus foetidus</i>	Skunk cabbage	WF, WO
<i>Taraxacum officinale</i> *	Common dandelion	WS
<i>Thalictrum pubescens</i>	Tall meadow-rue	WO
<i>Thalictrum thalictroides</i>	Rue anemone	WF
<i>Thelypteris noveboracensis</i>	New York fern	UF, UO
<i>Thelypteris palustris</i>	Marsh fern	WF, WO
<i>Tilia americana</i>	Basswood	UF
<i>Torreyochloa pallida</i> var. <i>pallida</i>	Pale mannagrass	WF
<i>Turritis glabra</i>	Tower rockcress	UO
<i>Toxicodendron radicans</i>	Poison ivy	WS
<i>Toxicodendron vernix</i>	Poison sumac	WO
<i>Tragopogon dubius</i> *	Goat's-beard	ROW
<i>Trientalis borealis</i>	Starflower	UF
<i>Triadenum</i> species	Marsh St. John's-wort	WO
<i>Trichostema brachiatum</i> †	False pennyroyal	UO
<i>Tridens flavus</i>	Purpletop	UO, MF
<i>Trifolium campestre</i> *	Hop-clover	UO
<i>Trifolium repens</i> *	White clover	UO
<i>Trillium erectum</i>	Purple trillium	WF
<i>Tsuga canadensis</i>	Hemlock	UF
<i>Tussilago farfara</i> *	Coltsfoot	WS
<i>Typha latifolia</i>	Common cat-tail	WO
<i>Ulmus americana</i>	American elm	WF
<i>Urtica dioica</i> *	Stinging nettle	UF, WF
<i>Utricularia</i> species	Bladderwort	SR
<i>Uvularia perfoliata</i>	Bellwort	UF
<i>Uvularia sessilifolia</i>	Bellwort	WF
<i>Vaccinium corymbosum</i>	Highbush blueberry	WS
<i>Veratrum viride</i>	False hellebore	WF



<i>Verbascum thapsus</i> *	Mullein	ROW
<i>Verbena hastata</i>	Blue vervain	WO
<i>Verbena urticifolia</i>	White vervain	UO
<i>Vernonia noveboracensis</i>	Ironweed	WO
<i>Veronica peregrina</i>	Purslane-speedwell	ROW
<i>Veronica officinalis</i> *	Speedwell	UO
<i>Veronica serpyllifolia</i> *	Thyme-leaf speedwell	UO
<i>Viburnum acerifolium</i>	Maple-leaf viburnum	UF
<i>Viburnum dentatum</i>	Southern arrow-wood	UF
<i>Viburnum nudum</i> var. <i>cassinoides</i>	Wild raisin	WF
<i>Vinca minor</i> *	Periwinkle	WF
<i>Viola conspersa</i>	American dog-violet	UF, WF
<i>Viola cucullata</i>	Blue marsh violet	WF, WO
<i>Viola pallens</i>	Pale violet	WF
<i>Viola pubescens</i>	Yellow violet	WF
<i>Viola sagittata</i>	Northern downy violet	UF
<i>Viola sororia</i>	Common violet	WF
<i>Vitis riparia</i>	Riverbank grape	WF
<i>Vitis labrusca</i>	Fox grape	UF, WF
<i>Wolffia borealis</i>	Dotted watermeal	WF, SR
<i>Wolffia columbiana</i>	Columbian watermeal	WF, SR
<i>Zanthoxylum americanum</i>	Prickly ash	UF, WF
<i>Zizia aurea</i>	Golden alexanders	UF

$\Sigma$  = 495 species

(?) Denotes a tentative species identification

(†) Denotes a species listed by the New York Natural Heritage Program (Young, 2007); see text for ranks

(\*) Denotes species regarded as alien to New York state (Mitchell and Tucker, 1997; NYFA Atlas, 2010) or of doubtful native origin at this site

<sup>1</sup> Nomenclature follows Flora North America (1993+) and/or New York Flora Atlas (1997)

<sup>2</sup> Common names follow Mitchell and Tucker (1997) and/or Weldy and Werier (2009)

<sup>3</sup> Species noted from or associated with any of the following broad site subdivisions: forested upland (UF); non-forested upland (UO); landfill/mowed field (MF); parking area/access road (ROW); forested wetland (WF); non-forested wetland (WO); Swamp River riparian corridor (SR). Species occurring in multiple (>2) sections are designated widespread (WS)

Appendix C:

Fauna (excluding birds and butterflies)



## APPENDIX C:

### LIST OF FAUNA (EXCLUDING BIRDS AND BUTTERFLIES) OBSERVED AT SLOCUM-MOSTACHETTI PRESERVE

Unless otherwise indicated, observations were recorded during field visits, April 2008-Oct. 2009  
(Sources: Field notes, photos and collections of S. Gilbert, C. Mangels, J. Utter and W. Wallace)

#### MAMMALS<sup>1</sup>

#### Comments

Big brown bat (?) (*Eptesicus fuscus*)

<Obs. in flight at dusk; this and/or other species possibly present (see text)

Cottontail (*Sylvilagus* species)

<One or more species present (see text)

Gray squirrel (*Sciurus carolinensis*)

<Obs. occasionally

Pine or red squirrel (*Tamiasciurus hudsonicus*)

<Obs. only on or near conifers

Beaver (*Castor canadensis*)

<Dams, dens & animals obs. at N end

Meadow vole (*Microtus pennsylvanicus*)

<Obs. at N end of landfill

Fox (*Vulpes* and/or *Urocyon*)

<Scat obs. along trails

Raccoon (*Procyon lotor*)

<Scat and footprints obs. in forested sections

River otter (*Lontra canadensis*)

<Probable slides and tracks obs. along Swamp River

White-tailed deer (*Odocoileus virginianus*)

<Ubiquitous evidence of sizeable local herd (see text)

Bobcat (*Lynx rufus*)

Tracks observed by Duhamel 2013

Coyote (*Canis latrans*)

Tracks observed by Duhamel 2013

#### REPTILES & AMPHIBIANS<sup>1</sup>

Gray treefrog (*Hyla versicolor*)

< Identified from vocal calls

Spring peeper (*Pseudacris crucifer*)

Northern green frog (*Rana clamitans*)

Pickerel frog (*Rana palustris*)

Wood frog (*Rana sylvatica*)

Painted turtle (*Chrysemys picta*)

<Obs. crossing right-of-way

Common snapping turtle (*Chelydra serpentina*)

Obs. by Sibyll Gilbert

Spotted turtle (*Clemmys guttata*)

Obs. by Musnick and other vols. NY Species of Special Concern

North American racer (*Coluber constrictor*)

<Obs. in field/clearing (NE side)

Eastern garter snake (*Thamnophis sirtalis sirtalis*)

<Obs. in swamp forest (W side)

## INSECTS (Butterflies and Moths in Appendix E)

### Odonata (Dragonflies & damselflies)<sup>2,3,6</sup>

Calico pennant (*Celithemis elisa*)  
Eastern pondhawk (*Erythemis simplicicollis*)  
Widow skimmer (*Libellula luctuosa*)  
Twelve-spotted skimmer (*Libellula pulchella*)  
Blue dasher (*Pachydiplax longipennis*)  
Common whitetail (*Platthemis lydia*)  
White-faced meadowhawk (*Sympetrum obtrusum*)  
Autumn meadowhawk (*Sympetrum vicinum*)

< All except this species previously  
reported for Great Swamp by K.  
Soltesz (Siemann, 1999)

### Orthoptera (Grasshoppers & katydids)

Band-winged grasshopper (?*Psinidia fenestralis*)  
Two-striped grasshopper (*Melanoplus bivittatus*)

### Phasmatodea (Stick insects)

Northern walkingstick (*Diapheromera femorata*)

### Mantodea (Mantises)<sup>4</sup>

Chinese mantis (*Tenodera sinensis*) \*

### Neuroptera (Lacewings & relatives)

Dobsonfly (*Corydalus* species)

### Coleoptera (Beetles)<sup>4,5</sup>

Margined carrion beetle (*Oiceoptoma noveboracense*)  
American carrion beetle (*Necrophila americana*)  
Click beetle (*Horistonotus curiatus*)  
Six-spotted tiger beetle (*Cicindela sexguttata*)  
Punctured tiger beetle (*Cicindela punctulata*)  
Pleasing fungus beetle (*Megalodacne fasciata*)  
Long-horned beetle (*Analeptura lineola*)  
Checkered beetle (*Placopterus thoracicus*)  
Checkered beetle (*Isohydnocera* species)  
Leaf beetle (*Ophraella* or *Pyrrhalta* species)  
Leaf beetle (*Plateumaris rufa*)  
Leaf beetle (*Prasocuris vittata*)  
Leaf beetle (*Chrysolina* species)  
Dogbane leaf beetle (*Chrysobothris auratus*)  
Japanese beetle (*Popillia japonica*) \*  
Water-lily leaf beetle (*Donacia* species)  
Net-winged beetle (*Caenia dimidiata*)

<Identified from collection

<Identified from collection

“

“

“

“

Obs. on buttercup flowers

Obs. on dogbane flowers

<Identified from collection

Soldier beetle ( <i>Chauliognathus marginatus</i> )	“
Snout beetle ( <i>Cylindridia proluxa</i> )	“
Snout beetle ( <i>Xyleborus</i> species)	“
Weevil ( <i>Odontocorynus</i> species)	“

#### Hymenoptera (Bees, wasps, ants & relatives)<sup>4</sup>

Bumblebee ( <i>Bombus</i> species)	<Frequently obs. on flowers
Paper wasp ( <i>Polistes</i> species)	<Nest located between parking area and hayfield
Spider wasp ( <i>Entypus</i> species)	<Obs. on flowers
Alleghany mound ant ( <i>Formica exsectoides</i> )	<Numerous large mounds observed along W side of fen/open wetland; probably either this species or <i>F. subsericea</i>

#### Diptera (Flies)<sup>4</sup>

Green bottle fly ( <i>Lucilia</i> species)	<Obs. on carrion
Robber fly ( <i>Laphria</i> species)	<Obs. on various flowers
Tachnid fly ( <i>Hystiricia</i> species)	<Obs. on <i>Daucus</i> flowers

#### CRUSTACEANS- Decapoda (Crabs & relatives)<sup>6,7</sup>

White river crayfish ( <i>Procambarus acutus</i> )	<Large (~15 cm) individuals observed moving across mud surface far from standing water in floodplain forest. Reported from Great Swamp
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#### ARACHNIDS- Areneae (Spiders)<sup>4</sup>

Black and yellow garden spider ( <i>Argiope</i> species)	
Fishing spider ( <i>Dolomedes</i> species)	<Obs. along Swamp River

#### MOLLUSCS – Gastropoda (Snails & relatives)<sup>4</sup>

Pouch snail ( <i>Physa</i> species)	<Obs. in numerous locations
<i>Succinea wilsonii</i> ?	

(?) Denotes a tentative species identification

(†) Denotes a species listed as S1, S2 or S3 or by the New York Natural Heritage Program (2007)

(\*) Denotes species alien to New York state

Nomenclature, identification and comments as follows:

- <sup>1</sup>New York State Dept. of Environmental Conservation. 2007. *Checklist of Amphibians, Reptiles, Birds and Mammals of New York State, Including Their Legal Status*. Wildlife Diversity Group, Division of Fish, Wildlife and Marine Resources, Albany.
- <sup>2</sup>Dunkle, S.W. 2000. *Dragonflies Through Binoculars*. Oxford University Press, New York.
- <sup>3</sup>Nikula, B., J.L. Ryan and M.R. Burne. 2007. *A Field Guide to the Dragonflies and Damselflies of Massachusetts*. Natural Heritage and Endangered Species Program, Massachusetts Division of Fisheries and Wildlife, Westborough.
- <sup>4</sup>NatureServe. 2008. NatureServe Explorer: An online encyclopedia of life. Ver. 7.0. NatureServe, Arlington, VA. Available at <http://www.natureserve.org/explorer>.
- <sup>5</sup> Identified by O.J. Blanchard from collected specimens
- <sup>6</sup>Siemann, D. 1999. *The Great Swamp: A Watershed Conservation Strategy*. Lower Hudson Chapter, The Nature Conservancy, Pawling, NY.
- <sup>7</sup>Cotroneo, C. 2008. Fish species-habitat associations in New York's Great Swamp. Thesis submitted to Board of Study in Natural Science, Division of Environmental Studies, Purchase College, State University of New York.



## Appendix D:

### Avifauna



## APPENDIX D:

### LIST OF AVIFAUNA OBSERVED AT SLOCUM-MOSTACHETTI PRESERVE 2008-2013

(Sources: Field notes, photos and collections of S. Gilbert, C. Mangels, J. Utter, W. Wallace, L. Federman, B. Butler, and others)

#### BIRDS<sup>1</sup>

Canada goose ( <i>Branta canadensis</i> )	
Wood duck ( <i>Aix sponsa</i> )	
Mallard ( <i>Anas platyrhynchos</i> )	
Black scoter ( <i>Melanitta americana</i> )	
American black duck ( <i>Anas rubripes</i> )	<Swamp River corridor
Wild turkey ( <i>Meleagris gallopavo</i> )	
Great blue heron ( <i>Ardea herodias</i> )	
Green heron ( <i>Butorides virescens</i> )	<Swamp River corridor
American bittern ( <i>Botaurus lentiginosus</i> )	
Turkey vulture ( <i>Cathartes aura</i> )	
Red-tailed hawk ( <i>Buteo jamaicensis</i> )	
Red-shouldered hawk ( <i>Buteo lineatus</i> )	
Cooper's hawk ( <i>Accipiter cooperii</i> )	
Sharp-shinned hawk ( <i>Accipiter striatus</i> )	
American kestrel ( <i>Falco sparverius</i> )	
American woodcock ( <i>Scolopax minor</i> )	<Obs. several times at interface of swamp and base of landfill
Spotted sandpiper ( <i>Actitis macularius</i> )	
Mourning dove ( <i>Zenaidura macroura</i> )	
Black-billed cuckoo ( <i>Coccyzus erythrophthalmus</i> )	
Yellow-billed cuckoo ( <i>Coccyzus americanus</i> )	
Great horned owl ( <i>Bubo virginianus</i> )	<Swamp River corridor
Barred owl ( <i>Strix varia</i> )	<Swamp River corridor
Northern Saw-whet owl ( <i>Aegolius acadicus</i> )	<One bird found dead under dense red cedars near N end (Oct. 2009)
Killdeer ( <i>Charadrius vociferus</i> )	
Chimney swift ( <i>Chaetura pelagica</i> )	
Belted kingfisher ( <i>Megasceryle alcyon</i> )	
Common nighthawk ( <i>Chordeiles minor</i> )	
Red-bellied woodpecker ( <i>Melanerpes carolinus</i> )	
Downy woodpecker ( <i>Picoides pubescens</i> )	
Hairy woodpecker ( <i>Picoides villosus</i> )	
Yellow-bellied sapsucker ( <i>Sphyrapicus varius</i> )	
Northern flicker ( <i>Colaptes auratus</i> )	
Pileated woodpecker ( <i>Dryocopus pileatus</i> )	<Swamp River corridor
Eastern kingbird ( <i>Tyrannus tyrannus</i> )	
Great crested flycatcher ( <i>Myiarchus crinitus</i> )	
Least flycatcher ( <i>Empidonax minimus</i> )	
Eastern phoebe ( <i>Sayornis phoebe</i> )	
Eastern wood pewee ( <i>Contopus virens</i> )	
Willow flycatcher ( <i>Empidonax traillii</i> )	

Blue jay (*Cyanocitta cristata*)  
 American Crow (*Corvus brachyrhynchus*)  
 Tree swallow (*Tachycineta bicolor*)  
 Barn swallow (*Hirundo rustica*)  
 Black-capped chickadee (*Parus atricapillus*)  
 Tufted titmouse (*Parus bicolor*)  
 White-breasted nuthatch (*Sitta carolinensis*)  
 Brown creeper (*Certhia americana*)  
 House wren (*Troglodytes aedon*)  
 Winter wren (*Troglodytes hiemalis*)  
 Carolina wren (*Troglodytes carolinus*)  
 Golden-crowned kinglet (*Regulus satrapa*)  
 Ruby-crowned kinglet (*Regulus calendula*)  
 Blue-gray gnatcatcher (*Poliophtila caerulea*)  
 Eastern bluebird (*Sialia sialis*)  
 Veery (*Catharus fuscescens*)  
 Wood thrush (*Hylocichla mustelina*)  
 Hermit thrush (*Catharus guttatus*)  
 Northern parula (*Setophaga pitiaumi*)  
 Gray catbird (*Dumetella carolinensis*)  
 Starling (*Sterna vulgaris*)\*  
 Cedar waxwing (*Bombycilla cedrorum*)  
 Red-eyed vireo (*Vireo olivaceus*)  
 Warbling vireo (*Vireo gilvus*)  
 Blue-winged warbler (*Vermivora pinus*)  
 Yellow warbler (*Dendroica petechia*)  
 Yellow-rumped warbler (*Dendroica coronata*)  
 Chestnut-sided warbler (*Dendroica pensylvanica*)  
 Blackpoll warbler (*Dendroica striata*)  
 Prairie warbler (*Dendroica discolor*)  
 Black-and-white warbler (*Mniotilta varia*)  
 Black throated green warbler (*Dendroica*)  
 American redstart (*Setophaga ruticilla*)  
 Northern waterthrush (*Seiurus noveboracensis*)  
 Louisiana waterthrush (*Seiurus motacilla*)  
 Kentucky warbler (*Oporornis formosus*) †  
 Common yellowthroat (*Geothlypis trichas*)  
 Yellow-throated vireo (*Vireo flavifrons*)  
 Eastern towhee (*Pipilo erythrophthalmus*)  
 Field sparrow (*Spizella pusilla*)  
 White-throated sparrow (*Zonotrichia albicollis*)  
 Swamp sparrow (*Melospiza georgiana*)  
 Song sparrow (*Melospiza melodia*)  
 Chipping sparrow (*Spizella passerina*)  
 Savannah sparrow (*Passerculus sandwichensis*)  
 Scarlet tanager (*Piranga olivacea*)  
 Northern cardinal (*Cardinalis cardinalis*)  
 Rose-breasted grosbeak (*Phenicticus ludovicianus*)  
 Indigo bunting (*Passerina cyanea*)  
 Eastern madowlark (*Sturnella magna*)  
 Bobolink (*Dolichonyx oryzivorus*)  
 Red-wing blackbird (*Agelaius phoeniceus*)

<Obs. on late visit (Oct. 2008)

<Obs. on late visit (Oct. 2008)

Baltimore oriole (*Icterus galbula*)  
Common grackle (*Quiscalus quiscula*)  
Brown-headed cowbird (*Molothrus ater*)  
Purple finch (*Carpodacus purpureus*)  
American goldfinch (*Carduelis tristis*)  
Virginia Rail (*Rallus limicola*)

Obs by L. Federman, B. Butler, dates  
unk.

Wilson's Snipe (*Gallinago delicata*)

Obs. by A. Dimmitt, date unk.

(?) Denotes a tentative species identification

(†) Denotes a species listed as S1, S2 or S3 or by the New York Natural Heritage Program (2007)

(\*) Denotes species alien to New York state

Nomenclature, identification and comments as follows:

<sup>1</sup>New York State Dept. of Environmental Conservation. 2007. *Checklist of Amphibians, Reptiles, Birds and Mammals of New York State, Including Their Legal Status*. Wildlife Diversity Group, Division of Fish, Wildlife and Marine Resources, Albany.

# Appendix E:

## Butterflies



**APPENDIX E:**  
**SUMMARY OF BUTTERFLY OBSERVATIONS AND SPECIES ATTRIBUTES**  
(Species data source, W. Wallace; locations and data tabulation, W. Wallace, J. Utter and C. Mangels)

<u>Species</u>	<u>Observed habitat location</u> <sup>1</sup>	<u>Ecological specificity/primary hostplant species or group</u> <sup>2</sup>
Eastern tiger swallowtail ( <i>Papilio glaucus</i> )	WS	G (various)
Black swallowtail ( <i>Papilio polyxenes</i> )	OF	G (umbellifers)
Spicebush swallowtail ( <i>Papilio troilus</i> )	WS	G (Spicebush)
Cabbage white ( <i>Pieris rapae</i> ) *	WS	G (mustards)
Orange sulphur ( <i>Colias eurytheme</i> )	WS	G (legumes)
Clouded sulphur ( <i>Colias philodice</i> )	WS	G (legumes)
Juniper hairstreak ( <i>Callophrys gryneus</i> )	PA,SO,OF	MG (Red cedar)
Spring azure ( <i>Celastrina ladon</i> )	WS	G (various)
Summer azure ( <i>Celastrina neglecta</i> )	WS	G (various)
Eastern tailed blue ( <i>Cupido comyntas</i> )	OF & TR	G (legumes)
Great spangled fritillary ( <i>Speyeria cybele</i> )	OF,WM,OW	MG (violets)
Meadow fritillary ( <i>Boloria bellona</i> )	OF	MG (violets)
Pearl crescent ( <i>Phyciodes tharos</i> )	OF	G (asters)
Baltimore checkerspot ( <i>Euphydryas phaeton</i> )	OF	MS (Turtleheads)
Question mark ( <i>Polygonia interrogationis</i> )	WM & OW	G (elms)
Eastern comma ( <i>Polygonia comma</i> )	WM & OW	G (nettles, elms)
Mourning cloak ( <i>Nymphalis antiopa</i> )	WS	G (various)
Red admiral ( <i>Vanessa atalanta</i> )	WS	G (nettles)
American lady ( <i>Vanessa virginiensis</i> )	WS	G (cudweeds, Pussy's toes)
Red-spotted admiral ( <i>Limenitis arthemis</i> )	WS	MG (various)
Viceroy ( <i>Limenitis archippus</i> )	OF & OW	MG (willows)
Northern pearly eye ( <i>Enodia anthedon</i> )	OW & ROW	MG (grasses)
Appalachian brown ( <i>Satyrodes appalachia</i> )	WM & OW	MG (sedges)
Little wood satyr ( <i>Megisto viola</i> )	WS	G (grasses)
Common ringlet ( <i>Coenonympha tullia</i> )	HF	G (grasses)
Common wood nymph ( <i>Ceryonis pegala</i> )	WS	G (grasses)
Monarch ( <i>Danaus plexippus</i> )	SO (WS)	G (milkweeds)
Delaware skipper ( <i>Anatrytone logan</i> )	OF	G (grasses)
Least skipper ( <i>Ancyloxypha numitor</i> )	PA & OW	G (grasses)
Dusted skipper ( <i>Atrytonopsis bianna</i> ) †	OF	MS (bluestem grasses)
Silver-spotted skipper ( <i>Epargyreus clarus</i> )	WS	G (legumes)
Juvenal's duskywing ( <i>Erynnis juvenalis</i> )	OF	G (oaks)
Wild indigo duskywing ( <i>Erynnis baptisiae</i> )	OF	MG (legumes)
Dion skipper ( <i>Euphyes dion</i> )	PA,OF,SO,NO	MS (sedges)
Dun skipper ( <i>Euphyes vestris</i> )	OF	G (sedges)
Cobweb skipper ( <i>Hesperia metea</i> )	OF	MS (bluestem grasses)
Indian skipper ( <i>Hesperia sassacus</i> )	OF	MG (grasses)

**APPENDIX E:**  
**SUMMARY OF BUTTERFLY OBSERVATIONS AND SPECIES ATTRIBUTES**  
(Species data source, W. Wallace; locations and data tabulation, W. Wallace, J. Utter and C. Mangels)

<u>Species</u>	<u>Observed habitat location</u> <sup>1</sup>	<u>Ecological specificity/primary hostplant species or group</u> <sup>2</sup>
Long dash ( <i>Polites mystic</i> )	OF	MG (bluegrasses)
Crossline skipper ( <i>Polites origenes</i> )	OF	G (grasses)
Peck's skipper ( <i>Polites peckius</i> )	OF	G (grasses)
Tawny-edged skipper ( <i>Polites themistocles</i> )	OF	G (grasses)
Hobomok skipper ( <i>Poanes hobomok</i> )	ROW	G (panic grasses)
Mulberry wing ( <i>Poanes massasoit</i> )	OF	S (sedges)
Broad-winged skipper ( <i>Poanes viator</i> var. <i>zizaniae</i> )	OF	MG (Common reed)
Little glassywing ( <i>Pompeius verna</i> )	OF	G (grasses)
Northern cloudywing ( <i>Thorybes pylades</i> )	OF & TR	G (legumes)
Northern broken-dash ( <i>Wallengrenia egeremet</i> )	OF	G (panic grasses)
European skipper ( <i>Thymelicus lineola</i> )		
Zabulon skipper ( <i>Poanes zabulon</i> )		
Hoary edge skipper ( <i>Achalarus lyciades</i> )		

**Table codes:**

(\*) denotes non-native species

(†) denotes State-listed rare/endangered species (NYNHP, 2007)

<sup>1</sup> Primary butterfly habitat areas onsite broken down as follows: ROW=access road; PA= parking area; SO=openings, S end; HF= hayfield; OW=open wetland, E side; WM= wet meadow/woodland; OF= oldfield; NO= openings, N end; TR= grassy trails; WS= widespread

<sup>3</sup> S = "Specialist", MS = "Medium Specialist", MG = "Medium Generalist", G = "Generalist"  
(from Cech and Tudor, 2005)



Appendix F:

Invasive Plants



## Appendix F: INVASIVE PLANT SPECIES

compiled by Chris Mangels

### Species

### Form

#### **Woody**

Buckthorn ( <i>Rhamnus cathartica</i> )	Shrub
Autumn olive ( <i>Elaeagnus umbellata</i> )	Shrub
Multiflora rose ( <i>Rosa multiflora</i> )	Shrub (vining)
Japanese barberry ( <i>Berberis thunbergii</i> )	Shrub
Border privet ( <i>Ligustrum obtusifolium</i> )	Shrub
Burning bush ( <i>Euonymus alatus</i> )	Shrub
Morrow honeysuckle ( <i>Lonicera morrowii</i> )	Shrub
Japanese honeysuckle ( <i>Lonicera japonica</i> )	Shrub (vining)
Oriental bittersweet ( <i>Celastrus orbiculatus</i> )	Shrub (vining)
Periwinkle ( <i>Vinca minor</i> )	Creeping perennial
White willow ( <i>Salix alba</i> )	Tree
Norway maple ( <i>Acer platanoides</i> )	Tree
Tree-of-Heaven ( <i>Ailanthus altissima</i> )	Tree
Catalpa ( <i>Catalpa</i> species)	Tree
European spindle-tree ( <i>Euonymus europeaus</i> )	Tree
Climbing nightshade ( <i>Solanum dulcamra</i> )	Shrub (vining)
Apple/crabapple ( <i>Malus</i> species)	Tree
Sweet cherry ( <i>Prunus avium</i> )	Tree
Scots pine ( <i>Pinus sylvestris</i> )	Tree

#### **Non-woody**

Common reed ( <i>Phragmites australis</i> )	Creeping perennial
Purple loosestrife ( <i>Lythrum salicaria</i> )	Clonal perennial
Canada bluegrass ( <i>Poa compressa</i> )	Creeping perennial
Smooth brome ( <i>Bromus inermis</i> )	Creeping perennial
Heath sedge ( <i>Carex flacca</i> )	Creeping perennial
Spotted knapweed ( <i>Centaurea stoebe</i> )	Perennial
Moneywort ( <i>Lysimachia nummularia</i> )	Creeping perennial
Garlic mustard ( <i>Alliaria petiolata</i> )	Herb
Siberian geranium ( <i>Geranium sibiricum</i> )	Herb
Mugwort ( <i>Artemisia vulgaris</i> )	Clonal perennial
Stinging nettle ( <i>Urtica dioica</i> )	Clonal perennial

# Paul Elconin Qualifications

## PAUL ELCONIN

79 Mitchell Road, Somers, NY 10589 ■ cell (203) 650-4679 ■ [paul.elconin@gmail.com](mailto:paul.elconin@gmail.com)

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Paul Elconin has over 13 years' experience with diverse New York nonprofit organizations as a program manager, consultant, board member, and coalition leader. As Stewardship Coordinator at the Open Space Institute he managed a land conservation program over a 17 county area, supervised the work of consultants, partners, and staff, prepared the organization's accreditation and reaccreditation application, and trained partners to enhance their proficiencies and capacity. As an independent consultant, Mr. Elconin collaborates with nonprofit clients, helping them achieve organizational goals and tailoring solutions to the appropriate scale and organizational capacity. His consulting projects include preparing management plans and baseline documentation reports and advising on capacity and outreach. Clients include the Land Trust Alliance, Oblong Land Conservancy, Putnam County Land Trust, Woodstock Land Conservancy, and the North Salem Open Land Foundation.

# PAUL ELCONIN

79 Mitchell Road, Somers, NY 10589 ▪ office (845) 277-1810 ▪ cell (203) 650-4679 ▪ [paul.elconin@gmail.com](mailto:paul.elconin@gmail.com)

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## ENVIRONMENTAL PROGRAM LEADER

**Stewardship • Partnerships • Coalition Leadership  
Organizational Development and Strategy • Consulting**

Extensive experience and career-long commitment to developing and managing strong environmental programs and building organizational capacity for sustained growth and impact.

Specific expertise includes:

- Forging and maintaining vital partnerships with land trusts, towns, State agencies, other non-profits, and citizen groups;
  - Providing collaborative technical and advisory consulting support to conservation organizations;
  - Supervising and guiding staff and consultants;
  - Fostering organizational development through such activities as board development, fundraising, volunteer coordination, and strategy setting; and
  - Guiding development proposals through the local planning board approval process.
- 

## PROFESSIONAL EXPERIENCE

### **INDEPENDENT CONSERVATION CONSULTING**

**2008 - Present**

- **Diverse Organizational Consulting Services:** Closely collaborate with non-profit clients—including the Land Trust Alliance (LTA)—on organizational goals and priorities, including:
  - **Capacity building, outreach, and organizational development** for NY Land Trusts as the Circuit Rider for the NY Conservation Partnership Program.
  - **Drafting organizational policies and accreditation applications.**
  - **Development of management plans** for land trust preserves (with and without public amenities).
  - **Preparation of conservation easement baseline documentation reports.**
- **Project Leadership:** Lead teams of partners to deliver key projects with sustained results. Consistently meet industry standards (LTA Standards and Practices).

### **OPEN SPACE INSTITUTE, INC. (OSI)**

**2000 - 2013**

#### **STEWARDSHIP COORDINATOR and MID-HUDSON LAND STEWARD**

- **Program Management:** Managed extensive stewardship program in eastern New York State and in the six-county mid-Hudson region. Ensured that 344 easements and 11,000± acres of fee lands in 17 counties were monitored and managed by staff, consultants, and partners. Managed expansion of program from 200 to 344 easements.
- **Partnerships:** Guided 18 municipal, land trust, and agency partners to monitor and document easements and worked with partners to manage many fee-owned lands. Closely collaborated with agency and NGO staff on diverse programs. Represented OSI on key regional coalitions.
- **Capacity Building:** Trained land trust and municipal partners in stewardship tasks to augment internal team. Provided hands-on field training as well as technical expertise, materials, and coaching on outreach to landowners.
- **New Acquisitions:** Negotiated conservation easements and fee land acquisitions and managed pre-closing due diligence including Phase I ESA, survey, title, documentation, and board review.
- **Budgetary:** Developed and tracked organization's ±\$1 million annual stewardship budgets. Budget approximately doubled during tenure.

**PAUL ELCONIN**

office (845) 277-1810 ▪ cell (203) 650-4679 ▪ paul.elconin@gmail.com

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**THE NATURE CONSERVANCY-EASTERN NEW YORK CHAPTER  
GREAT SWAMP PROGRAM DIRECTOR**

**2000**

- Completed The Nature Conservancy's Site Conservation Plan for the Great Swamp and presented the plan to State officials including Governor Pataki.
- Supported other area non-profits with local planning board project review.

**THE CHAZEN COMPANIES  
BIOLOGIST/PLANNER**

**1997 - 2000**

- Wrote and presented Draft and Final Environmental Impact Statements and coordinated the work of the Chazen team, clients, and subcontractors to ensure timely completion.
  - Other duties: Presenting site plans to municipal boards for planning and zoning approval; SEQRA documentation; drafting zoning ordinances; wetland delineation and permitting.
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**OTHER ENVIRONMENTAL LEADERSHIP EXPERIENCE**

**FRIENDS OF FAHNESTOCK AND HUDSON HIGHLANDS STATE PARKS (FOFHH) 2010 - Present  
VICE PRESIDENT**

- **Coalition Leadership:** Steer strategic partnership of citizens, NGOs, and municipalities on FOFHH's Hudson Fjord Trail; persuaded key citizens group to join FOFHH instead of forming independent NGO. Appointed to Steering Committee for Hudson Fjord Trail master plan.
  - **Partnerships:** Serve as key partner/contact for NYSOPRHP staff at all levels on projects, mission, and advocacy. Work closely with Scenic Hudson on the Hudson Fjord Trail and with Open Space Institute on joint fundraising for an ambitious capital project in Fahnestock State Park.
  - **Organizational Development and Leadership:** Co-led transformation of organization's activities, significantly strengthening its reputation, influence, and reach in <3 years.
  - **Board Development:** Recruited 3 new board members over the last 12 months including internationally acclaimed singer/songwriter Dar Williams.
  - **Fundraising:** Play core role in grant writing, social media campaigns, and mailings.
- 

**EDUCATION**

**STATE UNIVERSITY OF NEW YORK-COLLEGE OF ENVIRONMENTAL SCIENCE AND FORESTRY  
M.S., Forest Resources Management**

**1997**

**YALE UNIVERSITY  
B.S., Environmental Biology**

**1991**

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**OTHER PROFESSIONAL NOTES**

- Excellent writing, research, and communication skills.
- Proficient with Microsoft Professional Office.
- Experienced photographer: photos have been used on OSI website and in publications, on the Hudson Valley Greenway website, and by other organizations.